FORECAST 2009

# COMPUTERWORLD®

## Everything You Know Is Wrong

**The business world is changing in unprecedented ways. Here's how to survive and prosper in what promises to be a bumpy 2009.** PAGE 9

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Microsoft SQL Server 2008

## ■ NEWS DIGEST

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**36** Frankly Speaking: **Frank Hayes** thinks the economy will improve this year, and he tells IT leaders how to prepare for the upswing.

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**QUICKPOLLS**

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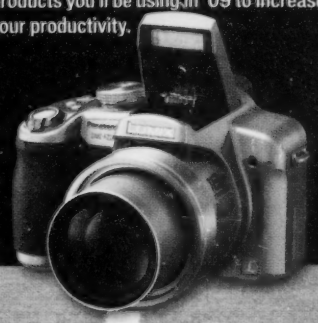

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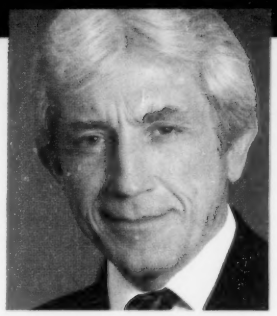
■ EDITOR'S NOTE

Don Tennant

# Won't, but Should



WHAT WOULD our annual Forecast package be without my now-legendary annual cop-out? Yes, it's time once again for my shameless shirking of responsibility as I weasel out of my obligation to predict what's going to happen in the new year. As I readily acknowledge every year at this time, I don't have the slightest idea what the next 12 months hold for us. Predicting the future is really hard.

But no way am I going to let a blank look and clueless shrug be the extent of my contribution to the package. I can do the prediction thing with the best of 'em, as long as it has nothing to with predicting what will happen. Instead, here is my exponentially safer and less difficult fourth annual list of things that *won't* happen in the new year. And this year, I'm even adding a twist: Not only am I explaining *why* these things won't happen, I'm filling you in on why they *should*.

■ **CA will not acquire Sun Microsystems.**
**Why it won't happen:** Well, for one thing, it would be just plain stupid. What on earth would an enterprise systems management software vendor do with a fading boutique hardware supplier that has no software of any real value?
**Why it should:** Somebody needs to put Sun's shareholders out of their misery. And although CA has transformed itself from the monster it was under the reign of Charles Wang, there must be *somebody* in the bowels of CA's Long Island headquarters who still remembers how to acquire a company and make all traces of it go away.

■ **Apple will not get its enterprise computing act together.**
**Why it won't happen:** There's too much money to be made in gadgets you can hold up to a speaker to find out the name of the song being played. Why deal with pesky CIOs?
**Why it should:** Dale Frantz, CIO at Auto Warehousing Co., has saved about $1 million in licensing fees by shifting from Windows PCs and servers to Macs, but with next to no help from Apple. If Steve Jobs would show some mercy and grease the skids a little, more IT shops could cut licensing fees rather than jobs.

**■ I can't be the only one who's wondering whether Mark Hurd can duck a shoe as easily as he can duck a question.**

■ **Novell will not hold its heretofore annual BrainShare user and partner conference.**
**Why it won't happen:** For starters, the Novell brass said a couple of weeks ago that there'll be no BrainShare because of the lousy economy and restricted travel budgets. So, this is more of a "postdiction" than a prediction. OK, I cut a corner — it's not like I'm some Gartner guy and you're paying an obscene amount of money for this.
**Why it should:** It's hard enough as it is to convince people that Novell is still around. Killing off its only means of getting a little attention won't exactly raise the outfit's profile.

■ **No irate reporter will throw his shoes at Hewlett-Packard CEO Mark Hurd at the HP Technology Forum.**
**Why it won't happen:** Numbskull Iraqi reporters can get a lot closer to the president of the United States than tech journalists can get to Hurd. A reporter would need to have an arm like Tom Brady's to even have a shot. Plus, times are tough in the media business, and shoes are expensive.
**Why it should:** I can't be the only one who's wondering whether Hurd can duck a shoe as easily as he can duck a question.

■ **Power consumption in U.S. data centers will not decline by any appreciable degree.**
**Why it won't happen:** Too few data center managers have any clue what their electricity bill is, and even fewer have figured out that being "green" is as much about smart expense management that saves jobs as it is about some obscure "carbon footprint."
**Why it should:** If you have to ask, you must still have a job.

Do you have a not-going-to-happen prediction we can add to the list? E-mail it to me, and I'll compile whatever won't get us sued in my blog. ■

**Don Tennant** *is* Computerworld's *senior editor-at-large. You can contact him at don_tennant@computerworld.com and visit his blog at* http://blogs.computerworld.com/tennant.

# News Digest

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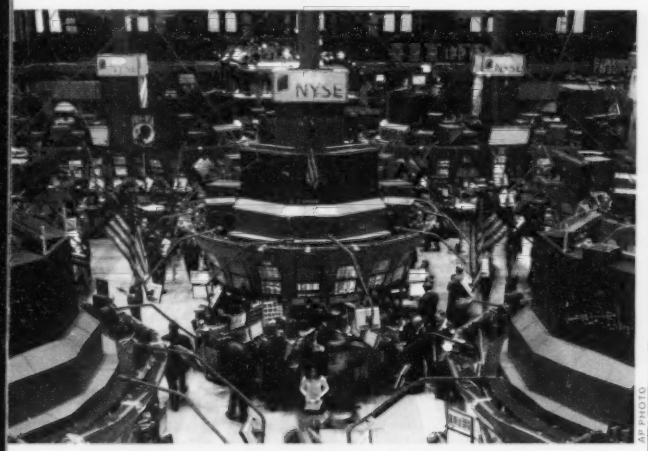
## THE WEEK AHEAD

**JAN. 5:** The annual Macworld Conference & Expo opens in San Francisco. Apple said last month that it won't exhibit at or send keynote speakers to Macworld after this year's show.

**JAN. 5:** A one-day conference on the future of the Federal Communications Commission takes place in Washington.

**JAN. 7:** The International CES trade show, focused on consumer electronics, starts in Las Vegas with an evening keynote by Microsoft CEO Steve Ballmer. The show floor opens Jan. 8.

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BUSINESS INTELLIGENCE

## NYSE Turns to Appliances In BI Consolidation Effort

NYSE EURONEXT Inc., which operates the New York Stock Exchange, Euronext and other stock markets, has turned to data warehousing appliances from Greenplum Inc. and Netezza Corp. as it consolidates its business intelligence systems.

Steven Hirsch, senior vice president and chief data officer at NYSE Euronext, said that the appliances from Greenplum and Netezza have significantly accelerated analysis of the company's internal business and performance data.

The New York-based stock exchange operator's previous BI infrastructure consisted of Oracle data warehouses paired with BI servers running analysis software from SAS Institute Inc., Hirsch said. Having separate servers for data warehousing and BI "doesn't work when you are processing terabytes of data per day," he added. He declined to disclose the cost of the appliances.

The "long process of consolidating" the multiple BI tools used at NYSE Euronext, created in 2007 with the merger of NYSE Group Inc. and Euronext NV, is continuing, Hirsch said. "From SAS to Business Objects to Brio, we've got pretty much everything that's been released in the last five to 10 years," he noted.

The need to consolidate BI tools is widespread, according to the results of a Forrester Research Inc. survey of 82 CIOs and IT managers that was released late last month. More than 40% of respondents said that their firms are using three to five different BI analysis and reporting tools. More than one out of five are running six or more tools, the survey found.

Hirsch said that NYSE Euronext has been using the Greenplum 4500 appliance for about nine months to store and analyze data that can help managers determine the causes of slowdowns during the process of taking, executing and acknowledging trades for stocks, bonds and other securities.

The Netezza appliances have been used a bit longer to track and audit trades and orders, Hirsch said. Both vendors' appliances have so far kept up with the "pretty sophisticated types of analytics" required by stock exchanges, he added.

Hirsch said he also evaluated appliances from Datallegro (now part of Microsoft), ParAccel, Aster Data Systems and Teradata.

*— Eric Lai*

SECURITY

## Microsoft Tells How It Missed Critical IE Bug

**MICROSOFT CORP. developers overlooked a critical bug in the Internet Explorer browser because of a lack of adequate testing tools and training, a company official acknowledged last month.**

**The flaw, which Microsoft patched last week with an emergency update, had gone undetected for at least nine years.**

**Michael Howard, a principal security program manager who has been a proponent of the company's secure code-development process, said that Microsoft programmers had not been taught to look for the type of vulnerability that hit the data-binding function of IE.**

> **"I think this bug is a great example of 'You will never get the code 100% right, so multiple defenses are critical.'"**
> MICHAEL HOWARD, PRINCIPAL SECURITY PROGRAM MANAGER, MICROSOFT CORP.

**Even Microsoft's automated "fuzzer" testing tools, which are dropped into applications to find failures, missed the bug, Howard said in a post on the company's Security Development Lifecycle blog.**

**– GREGG KEIZER**

CAREERS

# Stimulus Could Create Thousands of IT Jobs

A FEDERAL ECONOMIC stimulus package expected early this year from the administration of President-elect Barack Obama should boost the job prospects of IT professionals.

Katherine McGuire, vice president of government relations at the Business Software Alliance, said Obama's "pro-tech agenda" could increase the number of technology jobs in the U.S. by 10%, adding about 300,000 high-paying IT positions, she said.

While IT isn't the lone source of high-skills jobs, McGuire said that Obama "is right to seek incentives for innovation and growth across the entire economy, which in turn will spur growth in the IT sector."

Robert McGovern, CEO of McLean, Va.-based JobFox Inc., which runs a careers Web site, agreed that if the package provides the hundreds of millions of dollars in funding expected, hundreds of thousands of IT jobs could be created.

He suggested that IT workers should try to show employers how their skills could be used on projects likely to be aided by stimulus funds.

For example, McGovern said, construction companies and engineering firms overseeing infrastructure upgrade projects need tech workers with strong computer-aided design and telecommunications skills. And companies creating alternative energy systems or modernizing health care processes need people with expertise in bioinformatics, information security or software development.

Regulatory mandates could also lead to the creation of new jobs for tech workers who have related systems integration and Web skills, McGovern added.

"Target your job search in those directions," he suggested.

The companies will probably fill the positions quickly after the funding is approved, he added. "What employers need more than anything is confidence. They have the open positions, but they are reluctant to fill them," McGovern said.

Even without a stimulus package, the jobs outlook in IT for 2009 is better than that of many other industries, said David Foote CEO of Vero Beach, Fla.-based Foote Partners LLC, which analyzes IT wages and hiring data.

"IT jobs are relatively safe in the aftermath of the economic meltdown," he said.

The IT job market is stable, Foote said, "because a lot has happened to show businesses that IT is really our edge."

According to Foote, some of the hottest areas for jobs over the next two years will be business analysis, financial and human resources applications, program management, and application development.

*— Patrick Thibodeau*

## Short Takes

Just days after patching a critical flaw in its Internet Explorer browser, Microsoft Corp. warned users about a serious bug in older versions of its SQL Server database. The bug could be exploited to run unauthorized software on systems that use SQL Server 2000 and SQL Server 2005.

Microsoft also announced that distributors and system builders can place final orders for Windows XP by the end of January but hold delivery until as late as May 30. The move virtually ensures that XP will be available until the scheduled release of Windows 7 in early 2010.

Unisys Corp. plans to lay off about 1,300 workers, implement salary freezes, slash 401(k) contributions, and consolidate facilities in order to cut costs by about $225 million.

Indian outsourcer Wipro Ltd. has agreed to acquire Citigroup Inc.'s Citi Technology Services subsidiary in Mumbai and Chennai for about $127 million in cash.

IT IN GOVERNMENT

# States Hope Feds Will Help Replace Legacy Systems

**WITH President-elect Barack Obama proposing to spend billions of dollars on road and bridge projects as part of his economic stimulus plan, some state CIOs are hoping that their aging IT infrastructures might also qualify for makeovers.**

There's a lot that needs to be updated. In an online survey of state CIOs conducted last summer by the National Association of State Chief Information Officers, nearly two-thirds of the 29 respondents said that between 40% and 80% of their IT setups consisted of legacy systems. And many reported that they were still running code written 20 or more years ago.

Kyle Schafer, West Virginia's chief technology officer and co-chairman of a NASCIO working group that wrote a report based on the survey results, plans to replace 92 long-used applications with an ERP system at an estimated cost of $40 million to $60 million.

NASCIO's report says many state systems "have become obsolete."

One of the selling points was lower operating costs. Schafer said that based on benchmarking done by a consulting firm, it costs West Virginia $33 to process an invoice, while states with modern ERP systems have an average processing cost of about $8.

West Virginia has a budget surplus, but many other states are facing deficits. Schafer said he hopes that as part of any stimulus package, the Obama administration treats IT upgrades the same way as other infrastructure-renewal projects.

– PATRICK THIBODEAU

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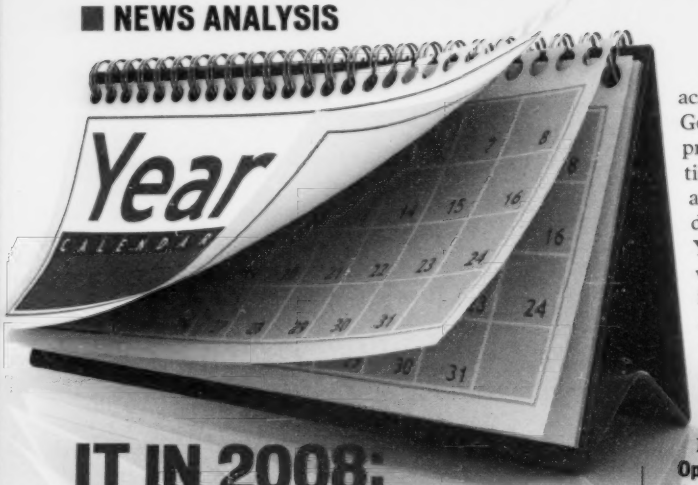



# IT IN 2008: NOT BUSINESS AS USUAL

## The recession dominated IT headlines. But Microsoft, HP and others also made notable tech news. By Marc Ferranti

WHAT first appeared to be a banking crisis became an economic mess for everyone, including IT professionals. The recession ensured that last year wasn't business as usual for IT departments and prompted tech analysts to slash their 2009 spending forecasts.

While the economic downturn was (and is) top of mind, it wasn't the only noteworthy IT news during 2008. Here, not necessarily in order of importance, is the rest of the IDG News Service's list of the year's top 10 technology stories:

**HP gobbles up EDS.** Hewlett-Packard Co.'s agreement in May to buy outsourcer Electronic Data Systems Corp. for $13.9 billion positioned HP to challenge IBM in the IT services market and surpass its rival as the world's largest vendor in terms of revenue.

**Microsoft tries to buy Yahoo, and Google wins.** Microsoft Corp. couldn't get Yahoo Inc. to agree to an acquisition — after which Google Inc. called off a proposed online advertising deal with Yahoo and Jerry Yang stepped down from his job as Yahoo's CEO. Meanwhile, Google is using its dominance of search and online advertising to develop new offerings that could diminish Yahoo's importance and pose a challenge to Microsoft's Office apps.

**Open XML gets a controversial victory.** In April, Microsoft declared victory in its effort to win fast-track approval of Office Open XML as an ISO standard. Some critics complained about irregularities in the voting process. But Microsoft and its supporters said that software developers and users now have a choice of ISO file format standards: one for Open XML, and the other for the Open Document Format for Office Applications.

**Android starts to open up handhelds.** The September launch of the T-Mobile G1 smart phone, built on top of Google's open-source Android software, introduced a more open business model for mobile devices. That got the attention of rivals: Even before the G1's rollout, Nokia Corp. said it would make its market-leading Symbian mobile operating system an open platform.

**Blu-ray beats HD DVD.** Toshiba Corp. announced last February that it would discontinue its HD DVD products, handing victory to Sony Corp. and other backers of the rival Blu-ray high-definition video disc format. Both camps sank hundreds of millions of dollars into the format war, and even the winners have battle scars: Sony conceded that it wouldn't reach its 2008 goal for sales of Blu-ray players.

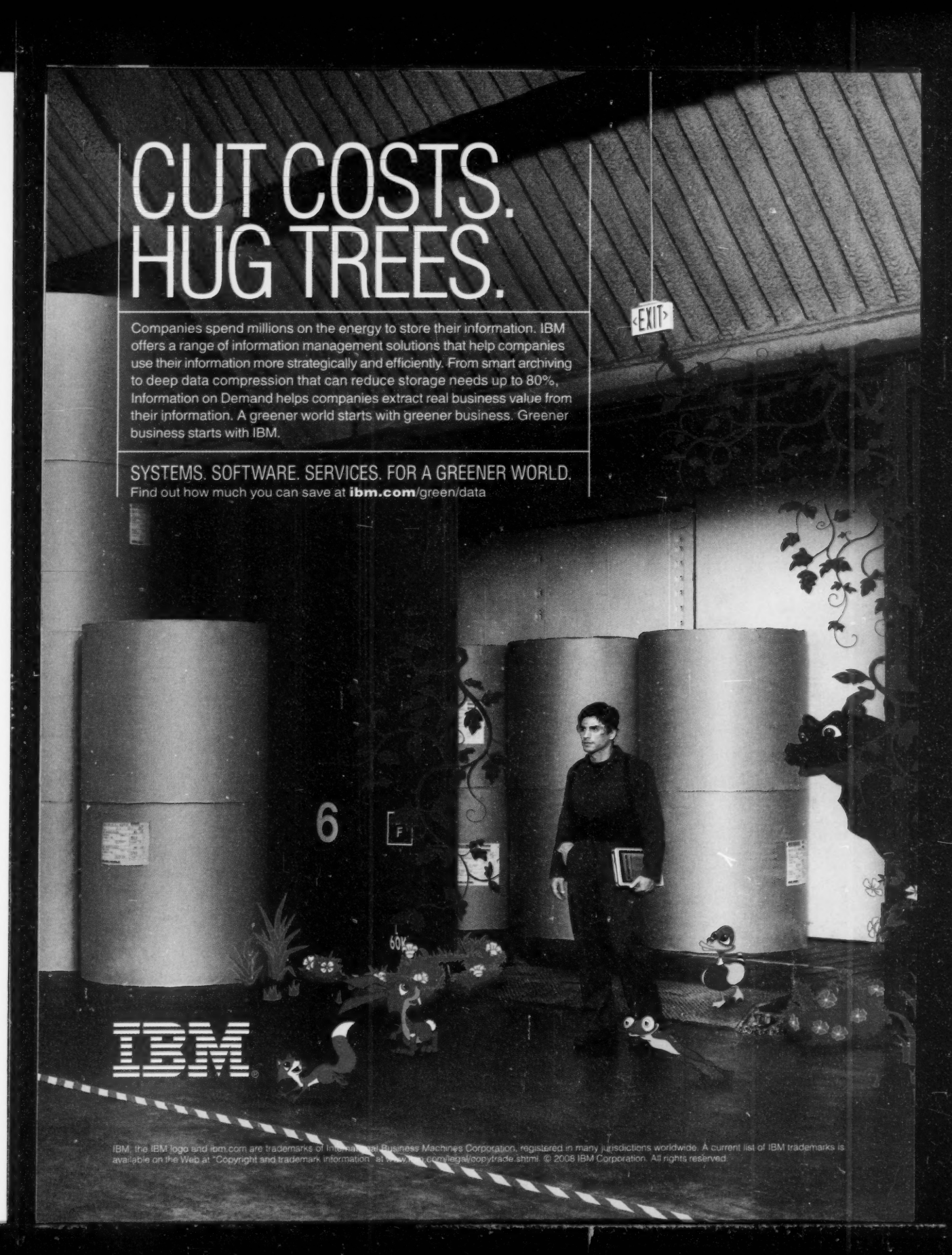
**Spam king McColo falls – but spam goes on.** McColo Corp., a Web hosting firm that allegedly ran systems used by various spamming and cybercrime operations, was disconnected from the Internet by its upstream ISPs in November. About half the spam circulating on the Net disappeared as well. Early last month, though, security researchers said spam volumes were already rising again as cybercrooks rebuilt botnets crippled by the McColo takedown.

**XP is dead; long live XP.** On June 30, a long-dreaded deadline arrived: PC makers could no longer sell systems loaded with Windows XP. But many users hope to skip Windows Vista and continue running XP until the upcoming Windows 7 is released. So Microsoft has created ways for people to continue getting their hands on the old operating system, such as giving business users the right to "downgrade" new PCs from Vista to XP.

**Obama taps tech to help clinch the election.** Among the keys to President-elect Barack Obama's victory were database technology, social networking, e-mail list management and automated business intelligence. Cutting-edge IT likely will be de rigueur in future campaigns.

**Gates retires from Microsoft.** When Bill Gates gave up his day-to-day role at Microsoft in June, it was a milestone for him, the software vendor and the IT industry as a whole. Gates now has a chance to make as much of an impact in philanthropy as he did in technology, via the Bill & Melinda Gates Foundation. ■

**Ferranti** *is a news editor at the IDG News Service.*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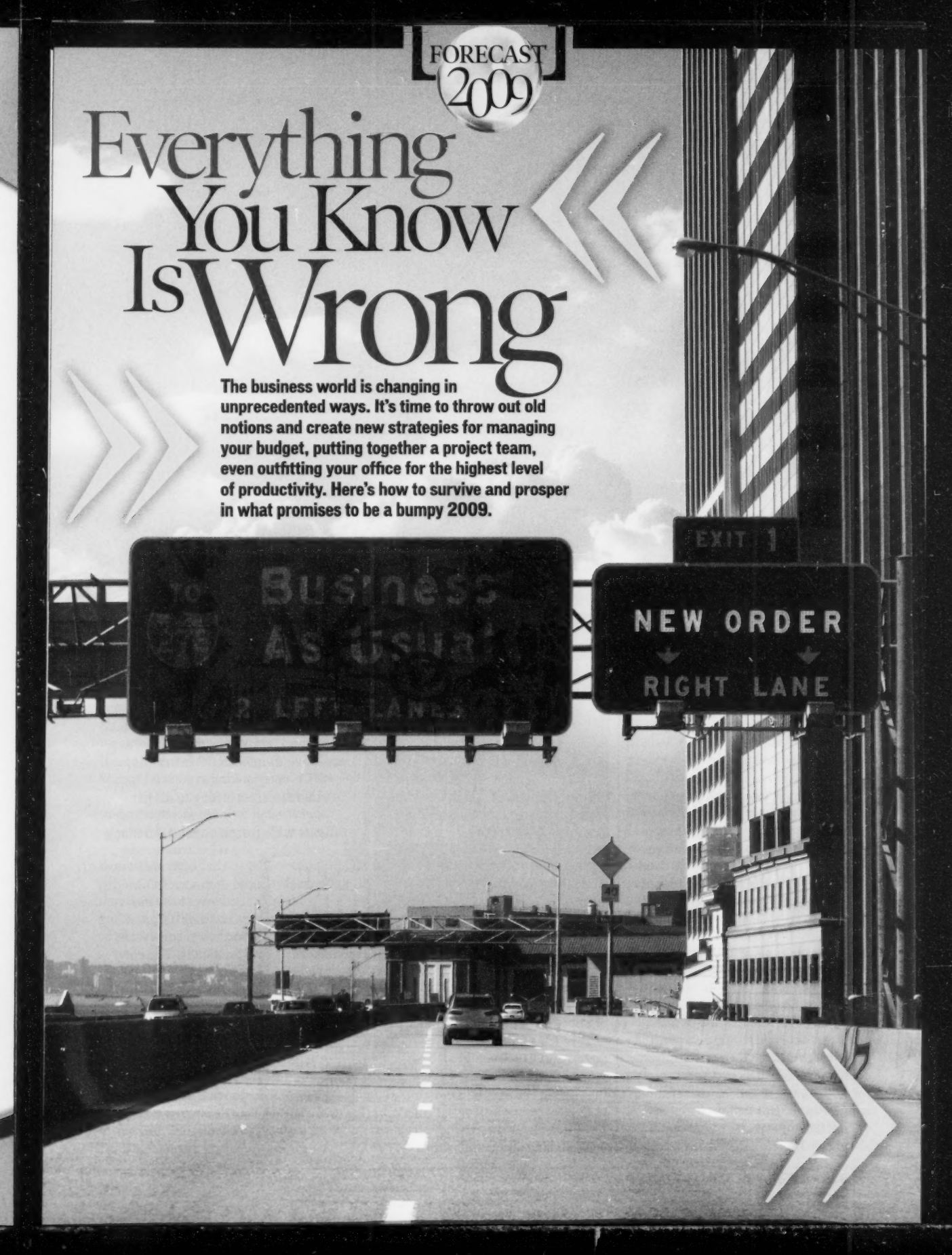
FORECAST 2009

# Everything You Know Is Wrong

**The business world is changing in unprecedented ways. It's time to throw out old notions and create new strategies for managing your budget, putting together a project team, even outfitting your office for the highest level of productivity. Here's how to survive and prosper in what promises to be a bumpy 2009.**



FORECAST 2009

# Bracing For a Sea Change

**OLD NOTION: Budgets change, but with some measure of predictability.**

**NEW ORDER: Be prepared to reset projects and expectations – on the fly.**

**BY MARY BRANDEL**

EARLY this past summer, well before the financial meltdown in mid-September, CIO Michael Twohig met with the executive leadership at Clean Harbors Environmental Services Inc. in Norwell, Mass., to discuss the company's 2009 budget. It was the first of many meetings intended to address what they saw as a troubling economy in the coming year, given conditions in the financial markets and general economic indicators. "Not that we had a real crystal ball, but we were concerned about the direction the future would be taking," Twohig says.

Despite that early and clear-eyed start, Twohig says he's back to reviewing his 2009 plan, thanks to the steady drumbeat of bad economic news that started with September's calamity on Wall Street. He says he is assessing the immediate actions he would take should the economy go into a total tailspin. He's working from two plans, based on worst- and best-case scenarios. That's a common practice, except that now, "Plan B has been heightened," he says. If put into action, it would call for a significant cut in capital expenditures, the bulk of which would be aimed at the development side of the house. "We always try to run a tight ship, but I'm looking at which projects we could literally do without," says Twohig.

Like those caught up in the stock market's wild ride, many IT leaders — even those who foresaw a tough 2009 — are in a heightened state of uncertainty regarding next year's spending plans. And like Twohig, many of them are revising their spending plans or at least preparing to be fluid and ready to respond to any number of scenarios. Shvetank Shah, executive director of the IT practice at The Corporate Executive Board Co., notes that in a survey of 52 IT organizations, 78% of the respondents said that they're re-evaluating their 2009 budget plans, 67% are putting nonessential projects on hold, and 57% are reducing their use of consultants and contractors.

What stands out, Shah says, is "the speed and extent to which the lights are being switched off." In mid-August, CIOs were looking at 2.8% budget increases, according to his firm's survey, but four weeks later, budgets were frozen or at least under heavy scrutiny.

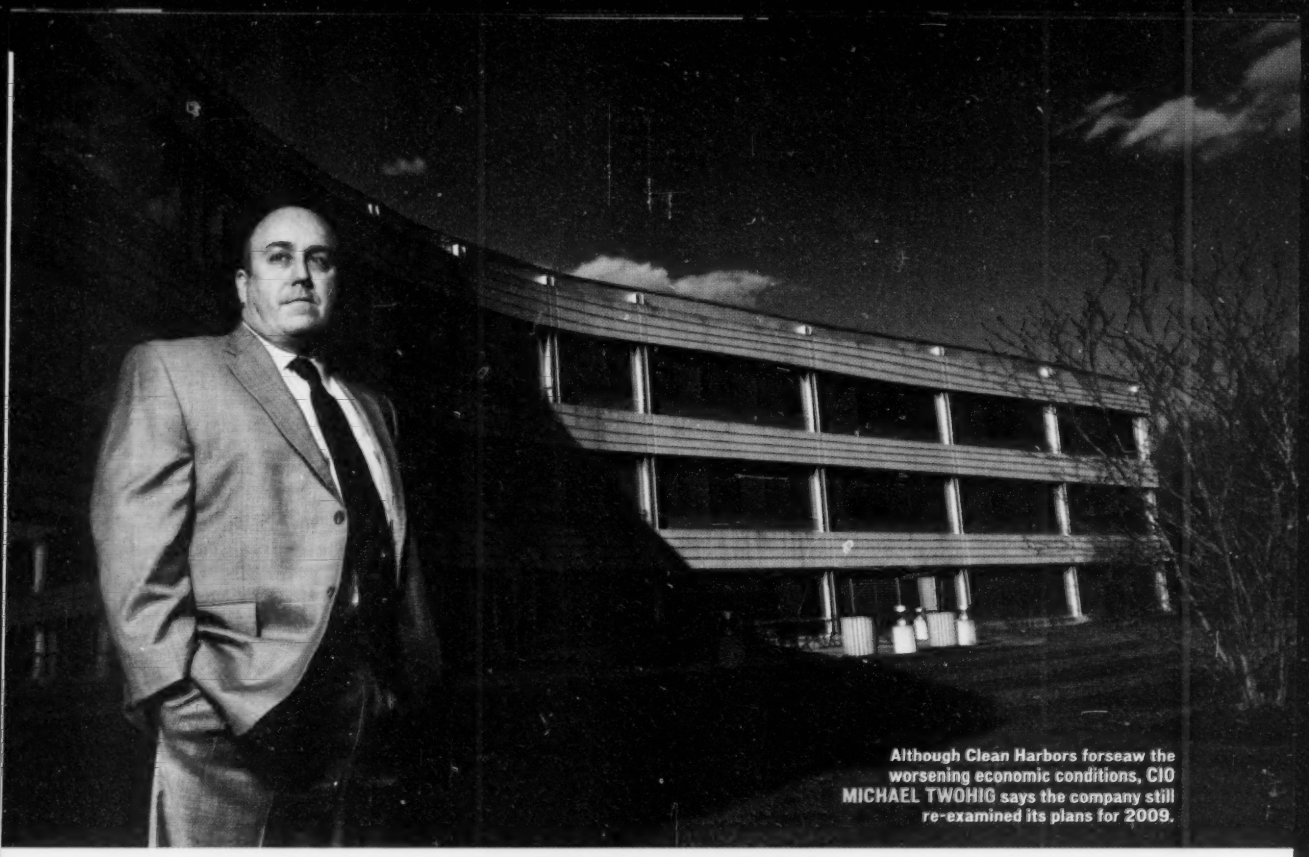
Analyst firms such as Gartner, IDC and Forrester have also revised their IT spending forecasts, sometimes drastically. The consensus is that global IT spending will likely fall somewhere between flat and 4% growth. "On a daily basis, people don't have an idea of the full impact of what's happening," says Gartner analyst Kurt Potter.

In September, a few

**BRIGHT SPOT**

**Forrester Research says managed services are poised to explode during the next 24 to 30 months because of brisk technological change, the high cost of capital, the desire to free IT staffers to focus on strategic work that grows revenue, and the need to maintain service levels even while staffing levels fluctuate.**

WEBB CHAPPELL



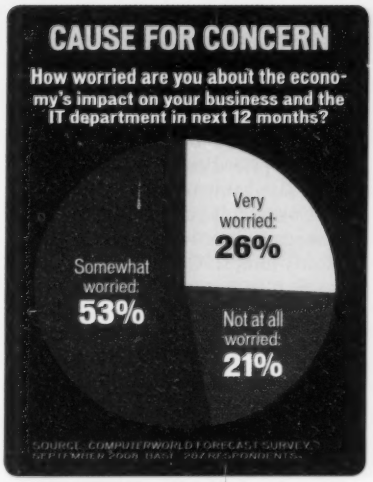
Although Clean Harbors forseaw the worsening economic conditions, CIO MICHAEL TWOHIG says the company still re-examined its plans for 2009.

weeks before the financial meltdown, IT executives who responded to *Computerworld*'s annual Forecast survey were already registering concern: 79% said they were either somewhat or very worried about the economy. And the percentage of respondents who reported that their IT budgets would increase in the next 12 months dropped from 47% in last year's survey to 28%.

With this unusual lack of visibility into next week's business conditions — much less next year's — IT's marching orders are shifting to emphasize flexibility, especially as business priorities and resources change. Here are six new factors to consider as the calendar page flips from a very dark end of 2008 to a decidedly murky 2009.

## 1 UNDERSTAND THE CREDIT CRUNCH

Today's credit crunch directly affects IT because, for many companies, technology is the No. 1 "capex" (capital expenditure) item, Shah says. That means IT leaders need to pay more attention to financial metrics such as the weighted average cost of capital, or WACC. "What's different about this crisis is it's a capex crisis," because it involves expenditures used to acquire or upgrade physical assets, he says.


CAUSE FOR CONCERN
How worried are you about the economy's impact on your business and the IT department in next 12 months?
Very worried: 26%
Somewhat worried: 53%
Not at all worried: 21%
SOURCE: COMPUTERWORLD FORECAST SURVEY, SEPTEMBER 2008; BASE: 202 RESPONDENTS

WACC measures the rate that a company is expected to pay to finance its assets. The higher the WACC, the higher the "hurdle rate" in a return-on-investment calculation, or the minimum rate of ROI that must be met to undertake a project.

So imagine, Shah says, a project that last year would have yielded $120 on an investment of $100. If interest rates are now 6% or 7% versus 3% or 4% last year, the project now has to yield more than $120 to make sense. The only choice is to squeeze out more ROI or decrease the investment.

Today, Shah sees hurdle rates increasing by five to seven percentage points, and he says CIOs should keep that in mind when choosing which projects to pursue, freeze or abandon. This will be a particularly hard exercise for companies that are midway through multiyear endeavors that consist of interconnected parts. "It's a skill set CIOs are learning — how to build small chunks of projects and still have a functional flow to preserve the structure of the technology architecture without abandoning it," Shah says.

Sometimes capex issues affect IT indirectly. At CPS Energy, CIO Christopher Barron says his budget will likely decrease by 1.5% this year because of plans to build new nuclear reactors and other construction projects. With the cost of capital rising by 20% or 30%, he says, the rest of the company is supporting these initiatives by holding down operational maintenance costs. "If we don't want to raise our

prices past a certain level, we need to trim expenses internally," he says. IT is also being asked to delay or defer projects, but Barron believes money will be funneled back to IT this year.

## 2 COMPRESS PAYBACK PERIODS

Another metric getting renewed scrutiny is payback period, Shah says. "It's not just about ROI, but what ROI can I get in Q1?" he says. "It's not just whether the CRM system can make the sales force better, stronger, faster, but can it do that by the end of June, and will I see it in the Q2 financial results?" This will change not just what gets funded but also how you think about sequencing projects and which components you're going to launch first, he says.

Chubb Insurance Co. CIO Jim Knight says his company will intensify its focus on a goal it has pursued in the past few months to break up projects into smaller components with deliverables every six months. "With demand always increasing and supply not increasing, we're focusing on how to become more agile in terms of how we provision what we do," he says. At the same time, Knight says he is looking at a budget increase for '09, which he attributes to prudent spending and the fact that Chubb's specialty area has been less affected by the downturn.

## 3 USE CONCRETE METRICS

According to Twohig, projects that show concrete cost reductions will take precedence over those that provide functional enhancements. "If a project reduces operational head count by 10 people, that's a pretty clear measurement," he says. "If I'm just enhancing productivity but am unsure how to measure the return, it's harder to float that kind of project to the top, even though you know it's good stuff."

For Clean Harbors, productivity improvements include enhancing reporting functionality and making changes to the ERP system. Projects more likely to be pursued in 2009 include pushing mobile functionality to the field staff, automating invoicing, creating Web self-service features and any project related to the three top corporate priorities — health, safety and compliance.

## PREDICTION

**"The winners in 2009 will be companies that continue to invest in IT. Any company that makes discerning investments has the opportunity to increase operational efficiency – in the face of declining or flat revenue.**

**HOWARD RUBIN,** FOUNDER OF RUBIN SYSTEMS INC., A GARTNER SENIOR ADVISER, AND AN MIT CISR ASSOCIATE

## 4 PREPARE FOR BUDGET FLUCTUATIONS

Deep uncertainty is causing some companies to overreact, Potter says, and decisions made now may be changed later. "There's simply not enough information on what the future will look like," he says. IT leaders should seek ways to not just be flexible but to turn on a dime. For instance, in addition to his best- and worst-case scenario plans, Twohig is also prepared to act quickly in the event of a severe downturn. "I've looked individual by individual in terms of what people we'd have to do without, based on project priorities," he says.

Shah says companies are also ditching the usual full-year budget plans and instead are providing funding in quarterly lumps. "Companies are doing scenario planning, which is not new, but it's coming back in style," he says. At the close of last year's fourth-quarter, for example, some enterprises were reserving the right to make decisions as late as the end of December, says Shah.

Barron is preparing for possible fluctuations by using what he calls a "sliding bar" approach. In other words, projects will maintain their ranking on the priority list, but as funding shifts, the bar will be raised or lowered. "The more funding available, the lower the bar goes across the list," he says.

## 5 LEARN MORE ABOUT SO-CALLED SILVER BULLETS

The credit crunch practically guarantees that CIOs will be pressured to consider new computing models that promise lower capital costs, such as cloud computing, which refers to a variety of techniques in which technology capabilities are provided as a service. "I'm sensing that the cloud will become to the '08-'09 recession what offshoring was to the '02 recession — a silver bullet trumpeted by pundits and business media," Shah says.

But he warns IT leaders to thoroughly investigate the economics of the cloud, including migration, transition and security costs, as well as the solvency of the vendors that offer it. "Capex is not just affecting end users but also technology vendors," he says.

## 6 RUTHLESSLY CLEAR DEAD WOOD

As companies ask all departments to look for efficiencies, IT won't be excluded, says Potter. Gartner is advising IT leaders to look for savings on three fronts until they return their focus to growth strategies.

The first is IT procurement. Potter says it might be possible to renegotiate or rebid contracts. And some Gartner clients are delaying big purchases, slowing down projects and even slowing the procurement approval process itself, to ensure that a purchase is the right decision and to obtain better deals.

The second category is cost savings within IT. Potter sees a renewed focus on reducing per-unit costs, such as cost per server, per terabyte of storage, per help desk ticket, per programmer or per line of code.

The third focus area is joint business and IT cost savings. This includes evaluating and possibly reducing the application portfolio by a certain percentage and eliminating redundant functionality.

No matter what happens in 2009, the IT organizations that rise to the top will be those that cut carefully if they need to reduce costs, focusing on the margins, not the core. That's why this downturn is so much different from the dot-com bust, Potter says. "IT was seen as the problem in '01-'02," he says. "But this time, IT will be looked to, to make up for possible reductions in staff and for revenue growth." ■

**Brandel** *is a* Computerworld *contributing writer. You can contact her at marybrandel@verizon.net.*

# Slow-Growing Green

**OLD NOTION: Green computing is expensive and low-yield.**

**NEW ORDER: Green offers easy ways to save cash.**

**BY MARY K. PRATT**

COULD SAVING the Earth — and your company's bottom line — be as simple as using fresh air to cool your data center?

It's not quite that simple, but it can be one step toward those goals, because companies that use natural air to cool their facilities are seeing big benefits on both the environmental and financial fronts. In fact, IT leaders, analysts and environmental advocates say there are plenty of opportunities for tech organizations to create more Earth-friendly operations that cut energy needs and slash a company's carbon footprint while saving money, too.

But many organizations still aren't capitalizing on such initiatives — even the ones that are relatively easy and inexpensive to implement.

IT executives who responded to *Computerworld*'s annual Forecast survey seem to echo that reluctance. Nearly half (42%) said their IT departments have no plans to launch projects in the next 12 months to reduce energy consumption or carbon emissions, and nearly three quarters reported no plans to create committees to oversee energy-saving initiatives.

Yet experts say organizations that ignore green computing now are going to have to catch up if they want to stay competitive. "The green issue is not going to go away. There's too much at stake," says Rakesh Kumar, an analyst at Gartner Inc.

That's not to say IT leaders don't have their reasons for staying away from green computing. Kumar says some of them think it's a fad. Christopher Mines, an analyst at Forrester Research Inc., says others believe global warming is a crock and that there's no need to act on the issue, or they see green as merely increasing expenses.

Many others are nervous about reworking established systems and processes. "The last thing these people want to do is take a screwdriver to IT processes that work and start reengineering them to make them more efficient," Mines says.

## EARLY ADOPTERS

Increasingly, however, IT leaders and other executives are putting aside such concerns and pushing for green IT initiatives.

When IDC surveyed 300 CEOs for its September 2008 "U.S. Green IT Survey," 44% of the respondents said that IT will play a very important role in their organizations' efforts to reduce their environmental impact. Compare that to the 2007 survey, in which only 14% of CEOs said they felt that way.

The 2008 survey also showed that energy costs were the most pressing reason for the adoption of green IT.

"We don't see many or indeed any companies that are hesitant to explore green IT projects," IDC analyst Vernon Turner wrote in an e-mail on this topic. "In fact, the scary thing is where to start, and it may be that reason why there is somewhat a feeling of lost souls. There has been a lot of marketing by the IT vendor community around green, and I think that CEOs and CIOs are 'greenwashed' by it."

To be sure, developing enterprise-wide green policies is a major undertaking. On the other hand, IT departments can implement some green IT initiatives without reworking entire policies, processes and procedures — and without spending a lot of cash.

Moreover, they can sell management on these projects based not just on the initiatives' environmental merits but on their financial rewards as well.

"A lot of stuff is going to give you a short-term payback," Kumar says. He says that given today's economy, CIOs should focus on green initiatives that will have paybacks well within 18 months. Projects with such quick ROI range from reducing energy demands by enabling more telecommuting and teleconferencing to consolidating data centers, he says.

## BRIGHT SPOT

**Green computing has gotten a lot of attention but not a lot of traction in recent years. Now, with the economy reeling, many companies are undertaking Earth-friendly IT projects to realize savings. "[The economic downturn] brought some realism into this wave. It got rid of some of the marketing hype and allowed companies to do some real, tangible stuff," says Gartner analyst Rakesh Kumar.**

"These, in our opinion, equal green IT," Kumar says.

With so many focused on reducing energy demand, IT organizations can easily sell initiatives that reduce power consumption — a quick way to save money and become green, says Katharine Kaplan, product manager at Energy Star for Consumer Electronics and IT at the U.S. Environmental Protection Agency.

"Power management is probably one of the easiest, low-cost ways to get big, big savings," Kaplan says, pointing out that using power management features on desktop PCs can save $50 per computer per year. Enabling power management tools on monitors can save another $12 to $90 annually per monitor.

Becky Blalock, senior vice president and CIO at Southern Co., an Atlanta-based energy company, says her organization is implementing power management technology to ensure that its 26,000 desktops are asleep at night and during other times of inactivity. Although the numbers aren't in yet, Blalock says she expects high savings throughout the organization.

**PREDICTION**

**"With payback times often measured in months for newer, more energy-efficient servers, storage systems and networking devices, one of the major drivers in 2009 will be performance per watt, whatever the performance measurement. There is no silver bullet on the power-generation side. Energy conservation will be very big in 2009.**

**ROB ENDERLE,** PRESIDENT AND PRINCIPAL ANALYST, ENDERLE GROUP

Managing desktops is just the start, says Henry Wong, senior staff technologist in the eco-technology program office at Intel Corp. He points out that better asset management is another simple step that can cut energy demand and costs. Just examine your operations to identify and turn off any device that isn't used or needed.

Mark O'Gara, vice president of infrastructure management at Highmark Inc., a health insurance company in Pittsburgh, says he's examining the need for any device that draws power — any fax machine, printer or copier — and figuring how to reduce its energy demands by either using power management tools or getting rid of the device. He says he's working with the company's facilities department to get baseline readings so he'll be able to measure progress.

"You can start to see what energy we use, find opportunities to reduce power costs and find ways to reduce it through capital improvements," O'Gara says.

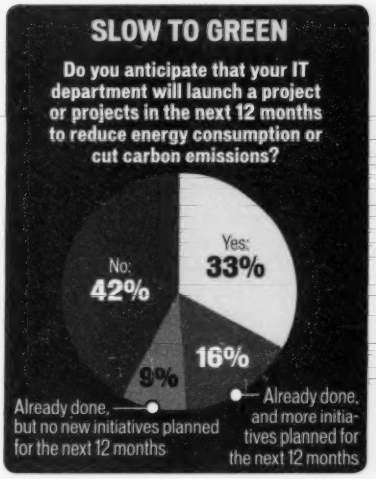
Another quick way to introduce green benefits that have financial paybacks is through refresh initiatives and procurement policies, says Michelle Erickson, initiative director of the sustainable IT program in global operations and technology at Citigroup Inc. in New York. For example, Citi is looking at implementing thin clients,

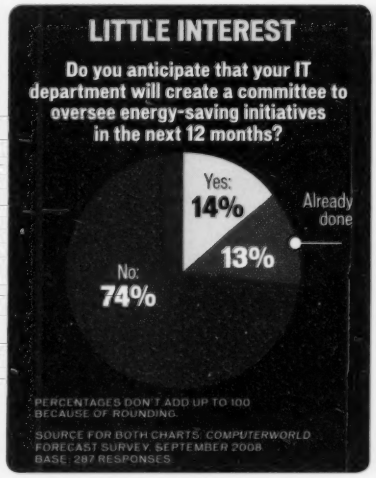
The epoxy for the modern IT executive.

which, because they have lower power needs, save money and reduce the company's carbon footprint.

Erickson also recommends setting procurement policies that specify that new equipment must be Energy Star-complaint, thereby ensuring that the company is getting more energy-efficient computers. And with new Energy Star standards rolling out in 2009, the policy will apply to servers too.

Similar strategies can be employed in the data center, Wong says. Look at the machines you have, and consolidate where you can to maximize the use of each server — but make sure that you can still meet the needs of your business units.


SLOW TO GREEN
Do you anticipate that your IT department will launch a project or projects in the next 12 months to reduce energy consumption or cut carbon emissions?
Yes: 33%
No: 42%
16%
9%
Already done, but no new initiatives planned for the next 12 months
Already done, and more initiatives planned for the next 12 months


LITTLE INTEREST
Do you anticipate that your IT department will create a committee to oversee energy-saving initiatives in the next 12 months?
Yes: 14%
Already done
13%
No: 74%
PERCENTAGES DON'T ADD UP TO 100 BECAUSE OF ROUNDING.
SOURCE FOR BOTH CHARTS: COMPUTERWORLD FORECAST SURVEY, SEPTEMBER 2008
BASE: 287 RESPONSES

"We did this at Intel and had a $3 million cost avoidance," Wong says. The dollar savings came from not having to build a new physical structure and pay for that new building's ongoing maintenance. As for the green benefits, there's less demand for power and new equipment.

"You can see another building that doesn't have to exist anymore. And it's the HVAC system, the people, the maintenance area — it's not just IT. That's a really big to-do," Wong adds.

But even organizations that aren't ready for those kinds of projects can simply start by controlling the temperature, Wong says. Although it will be necessary to monitor the humidity when doing so, most companies can raise the temperature at least a few degrees and start lowering their air conditioning demands. And don't forget about using that natural air for cooling.

It might not be the biggest step, but it's a start. ■

**Pratt** *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*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FORECAST 2009

# Project Priorities: Bold Moves in Tough Times

**OLD NOTION: In tight times, table or trim back all projects.**

**NEW ORDER: Move forward. To delay is to lose out on savings and innovation.**

## 1 The Security Imperative

Critical security projects escape the budget ax.

**BY STACY COLLETT**

LESLIE LAMBERT, vice president and chief information security officer at Sun Microsystems Inc., returned from a three-week business trip to India with a few souvenirs and a whole new set of IT security priorities for 2009.

India is home to 29 of Sun's 250 managed services providers. Economic troubles there have made it harder for those providers to build out their data centers, so they're procuring services from other providers around the globe.

"I'm going to be shifting focus," Lambert says. In 2009, projects like server security, metrics, application security and Web security will likely take a back seat to new data-protection measures and deeper enhancement of user-access and identity management systems. "Those are the big hitters now," she adds. In a steadier economy, all of the projects would likely have gone ahead, she says.

Indeed, security remains a top priority for all companies — with antivirus, encryption and identity management topping the list for *Computerworld*'s Forecast survey respondents. But with economic uncertainty overshadowing most IT budgets, managers will have to pick and choose the projects that are most important.

The U.S. Tennis Association (USTA) is a prime example. The organization generates 85% of its revenue in just two weeks in late summer during the U.S. Open tennis tournament, and with so much riding on one event, the IT staff can't afford any security snafus. So when CIO Larry Bonfante decided the USTA would need to upgrade its network access control system to protect the network from contaminants brought in by 800 media members using its Web site, the project got a green light, despite a flat budget.

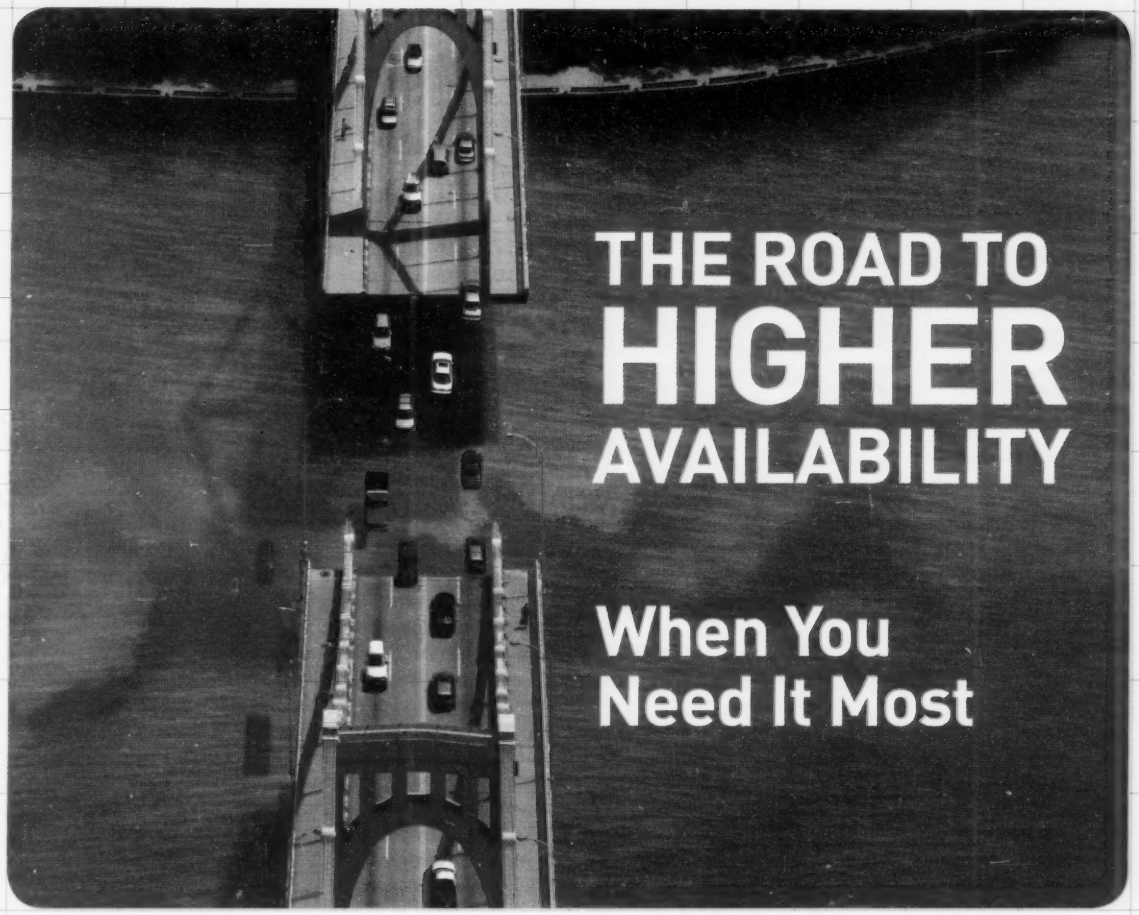
"Anything that can impact revenue, the fan or customer experience, or the game of tennis is considered business-critical," Bonfante says. Still, "all projects are certainly under significant scrutiny to make sure there's a tangible return on investment before we get funding for them. Security projects are no different in that regard."

Law firm Nexsen Pruet LLC plans to overhaul its intranet in 2009. Among other things, the upgrade will enable the system to grant users access to financials and reports according to their security levels. Despite the tough economy, the project will move forward, but at a slower pace than originally planned. "Increasing overall organizational efficiency and productivity sometimes means increasing spending for technology infrastructure and key applications," says Technology Director John E.C. Davis.

### KEEPING YOUR GUARD UP

Projects that "keep the bad guys out" are usually the most recession-proof, says John Pescatore, an analyst at Gartner Inc. But spending for projects that "let the good guys in" is often tied to business cycles. "If there's a new business project to open up new services and

*Continued on page 18*

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## PREDICTION

**"Security will no longer be an implicit requirement. As more people exchange money over the Web, as more people have their medical histories online, as more organizations want demographics – our privacy remains at risk. The most savvy organizations will not only be sure of their security, they will make security a selling point for their products and services.**

**JOHANNA ROTHMAN,** PRESIDENT, ROTHMAN CONSULTING GROUP INC.

*Continued from page 16*

products, there's a lot of security spending in identity and access management," says Pescatore. "But in 2009, that's probably the area we'll see get hit," creating a growing potential for security leaks.

Worst-case scenario: Companies could stop allowing employees to use their home PCs, laptops or iPhones for business use if identity and access management systems aren't in place. But Pescatore says that's not likely, again because of the economy.

"Some will reverse the privilege," most likely in government and financial sectors, he says. "But the majority of companies may say, 'If you use your home PC, we don't have to buy you one, and that will save us money.' " Some businesses might even consider letting workers use their own software, such as Google Apps.

"In businesses that are really under cost pressure, they may be very tempted to take the security risk to use these cheaper consumer alternatives," Pescatore adds.

The financial meltdown may also spark more regulations to address financial wrongdoing this year, which could in turn drive spending on reporting tools. While the new regulations may affect only financial firms, as opposed to every publicly traded company, "there may be a push for new risk reporting directly to the government," Pescatore says.

### GETTING COMPLIANT

In the meantime, companies in many industries will be working to comply with legal and regulatory mandates that protect private, sensitive information.

For instance, utilities have mandates from several regulatory bodies requiring them to secure SCADA — supervisory control and data acquisition — systems and industrial control tools that monitor processes. In the financial services sector, smaller banks are moving toward dual authentication to meet FDIC, Federal Financial Institutions Examination Council and Basell II standards. And retailers must meet payment-card industry requirements.

"Information security is non-negotiable for these organizations," says Jeff Bernstein, senior director of information assurance at Asero Worldwide Inc. in Washington. "For IT purchases such as hardware and software, there will probably be some suffering. But meeting internal and external security requirements" won't be compromised, he adds.

Industry-watchers worry that postponing some IT security projects could lead to risky business behaviors — especially with pesky new botnets infecting the most secure enterprises. "If I don't look for [malware], I'm not going to incur the expense of doing anything about them," Pescatore says.

The Procter & Gamble Co. has invested heavily in IT security, yet in 2007 it found that 4% of its PCs were compromised by botnets, according to a Gartner case study. To fix the problem, P&G had to reimage most of the 3,000 PCs — an expensive task.

But dealing with a breach is more expensive than preventing one, Pescatore says. An incident where information on 100,000 customers is exposed typically costs an enterprise $10 million to $15 million to fix, excluding damage to the brand name. But preventing a data leak costs $3 million to $5 million.

And with layoffs looming in all sectors, Gartner expects more companies to consider outsourcing some security functions. Also expect companies to turn to "security as a service" to help reduce software, management and maintenance costs and lower in-house power and cooling costs.

"Over five years, it may cost you more," Pescatore says, "but in 2009, it will cost you less." ■

**Collett** *is a* Computerworld *contributing writer.*

## BRIGHT SPOT

**Gartner's John Pescatore sees coming IT security challenges as an opportunity. "In these tough cycles, we have a chance to change the way we're doing things – not just take chances, but change everything and try to reduce how much you're spending on security."**

# 2 The Big Server Push

## Virtualization keeps server projects hot in 2009.

**BY ROBERT L. MITCHELL**

DAMN the torpedoes! Full speed ahead! Admiral David Farragut's famous American Civil War exclamation could be the rallying cry of the IT executives behind server and virtualization efforts. Rather than cutting and running as they face deepening economic woes, these IT professionals are pushing harder to complete their projects.

It's easy to understand why: Many server and virtualization projects deliver the kinds of cost savings that businesses crave right now. "These projects affect costs . . . and they affect revenue," says Dennis Smith, first vice president of advanced engineering at The Bank of New York Mellon Corp.

The slowing economy has ratcheted up management's sense of urgency to get those projects done. "Businesses are saying, 'How much faster can you do this, and how much more cost savings can you wring out if we give you more power to do this sooner?' " says James Staten, an analyst at Forrester Research Inc.

Perhaps that's why Forecast Survey respondents said their No. 1 and No. 2 increases in spending in 2009 will be in servers and virtualization technologies, respectively (see charts, page 20). Those projects are the second- and third-highest priorities, right

behind security. Rockwell Bonecutter, data center technology and operations practice lead at Accenture Ltd., works with IT executives at many Fortune 100 companies. "I haven't seen a significant pullback on refresh spending," he says, although new projects are getting more scrutiny — particularly capital-intensive ones.

Rather than simply reacting to the recession, some IT executives are leveraging it to push virtualization projects deeper into the business — and to drive harder bargains with vendors.

With the increased emphasis on cost savings and the bottom line, IT organizations that have begun virtualization projects and produced results have unprecedented clout to deliver those savings in areas of the business that have resisted the trend thus far. "This is a great time to take advantage of the situation in the economy to let technology do what it is meant to do," says Bonecutter.

> **"The number of vendors pushing discounts has really gotten extreme."**
> ERIC LINDGREN, CIO, PERKINELMER INC.

Success in consolidation and virtualization is also lowering resistance to change. "We're seeing a lot of interest from other parts of the organization to leverage IT in ways they haven't in the past," says Matthew Clark, director of IT at San Diego-based Qualcomm Inc. "They're asking us."

Smith says the economic crisis has technology vendors banging on the doors of his bank — and cutting deals. "In our space, there are a number of companies that had large orders, and over a weekend, they disappeared. It's a very, very good time [to buy]," he says. While many banks are struggling, Bank of New York Mellon has remained in a relatively good position to take advantage of those deals, he says.

IT bargains aren't limited to the financial services sector, says Eric Lindgren, CIO at PerkinElmer Inc., a life sciences and industrial technology company in Wellesley, Mass. "The number of vendors pushing discounts has really gotten extreme," he says, and the number of vendor visits to his offices increased sharply as the year wound down.

Scottrade Inc. is one of the few financial services firms that has benefitted from the credit crisis. As the masses have alternately rushed into and out of the market, the St. Louis-based online brokerage has operated one of the turnstiles through which all of that traffic has passed. "We are seeing record days in our business," says CIO Ian Patterson.

During the tumult, Scottrade took in a huge volume of fees on those trades — and survived unprecedented stresses on its server infrastructure.

At one point, programmed trading on a single financial firm's stock drove quote-system volatility to the point where prices were changing 600 times per second. Transaction volumes in the data center spiked to 5.5Gbit/sec., says Patterson.

"People were complaining about the markets and the speed. It was insane. I don't think we would have survived if we didn't have some of the hardware that's out there now."


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## TOP TO-DO'S

**What will be your company's top IT project priorities for the next 12 months?**

| | |
|---|---|
| 1 | Security |
| 2 | Servers |
| 3 | Disaster recovery/ business continuity |
| 4 | Storage |
| 5 | Data management |
| 6 | Application development/ management |
| 7 | Systems and infrastructure upgrade/management |
| 8 | Management/governance |
| 9 | Data centers |
| 10 | VoIP |

## CRITICAL ASSETS

**What technologies are the most critical to your company today?**

| | |
|---|---|
| 1 | Security |
| 2 | Data management |
| 3 | Disaster recovery/ business continuity |
| 4 | Storage |
| 5 | Servers |
| 6 | Web/Internet |
| 7 | Virtualization |
| 8 | Network management |
| 9 | Systems and infrastructure management |
| 10 | Business intelligence |

## TECH INVESTMENTS

**The top 10 technology areas that will see the biggest increase in spending in the next 12 months:**

| | |
|---|---|
| 1 | Servers |
| 2 | Virtualization technologies |
| 3 | Disaster recovery/ continuity planning |
| 4 | Networking equipment |
| 5 | Storage-area networks |
| 6 | Laptops |
| 7 | Desktops |
| 8 | Wireless/mobile devices |
| 9 | ERP |
| 10 | Data management/ business analytics |

SOURCE: COMPUTERWORLD FORECAST SURVEY, SEPTEMBER 2008. BASE: 297 RESPONDENTS

Because it had virtualized its front-end servers and used server blades, Scottrade was able to quickly add capacity to keep up with demand. It's going full speed ahead in 2009 with a planned backup data center and has already begun ordering servers.

Patterson plans to scale up the servers running the company's midtier quoting-system infrastructure — and its front-end servers. The new servers are fully loaded with the maximum processor core and memory configurations and the fastest processors.

That trend goes beyond online brokerages, says IDC analyst Michelle Bailey. "Virtualization tends to drive a scale-up strategy on the hardware side," she says, as businesses try to reduce the total number of physical machines and gain efficiencies by maximizing the number of virtual machines that can be consolidated onto a single physical server.

To reduce power and cooling loads in the data center, Scottrade will continue to buy PowerEdge servers from Dell Inc. that feature energy-saving technologies such as variable-speed fans, high-efficiency power supplies and low-voltage processors. While that might reduce the data center's carbon footprint, being green "is the flip side of what we're doing anyway," Patterson says. Reducing the cooling and power consumption "goes right to my bottom line."

While Scottrade uses embedded VMware virtualization software on its blade servers for rapid deployment on the front end, hypervisors use too much overhead in the midtier transaction-processing environment. With blades, Patterson says, "the backplane isn't fast enough to keep up." Instead, Scottrade uses "the hottest, biggest" 1U and 2U rack-mounted x86-class servers it can find.

Other operations are also moving toward buying fully loaded server platforms to host virtual machines in 2009. Dan Blanchard, vice president of enterprise operations at Marriott International Inc. in Bethesda, Md., says his company remains committed to rolling out a remote-recovery data center this year. Virtual servers will be key to Marriott's fail-over strategy. "We're definitely going with high-end systems. That way we can fit more virtual platforms on a single box," Blanchard says.

### PROCEED WITH CAUTION

But many organizations fear that capital-intensive projects might be affected if the economy worsens. At PerkinElmer, Lindgren has a major effort under way to consolidate 17 SAP ERP programs onto Itanium systems starting in early 2009. The equipment has already been purchased. "Thankfully, that one is ahead of the curve," Lindgren says.

In some cases, IT organizations are struggling to fund server consolidation efforts. "It's a 'capital-light' environment right now," but some IT organizations are using server refresh budgets to bootstrap virtualization efforts, says Bonecutter.

IT can harness refresh dollars to gain savings quickly by rationalizing the server environment, reducing not just the number of physical servers but the total number of server instances as well. IT organizations that do that, Bonecutter says, can make virtualization efforts a "self-funding exercise."

Many organizations haven't done that in the first phase of their virtualization rollouts, he notes, adding that rationalizing server environments will be a big priority for his clients this year.

Lindgren is also planning ahead for the possibility of cutbacks in both ongoing projects and operating budgets, although so far, none are expected. "We're buying portions of things over a three-month period so that if the economy changes, we can react quicker," he says.

If the economy worsens, many companies are likely to push IT projects out for a few quarters, says Bailey.

IT organizations are also looking for ways to reduce upfront capital outlays. "[The economy] has customers thinking of more leasing and hosting options," Bailey says.

At Scottrade, Patterson says the new data center will be hosted at a collocation facility. Lindgren also plans to rely on consultants and third-party service providers, just in case a rapid pullback is called for. As he says, "It's not a great time to be taking on a lot of risk." ■

# SaaS Realities

**OLD NOTION: SaaS is more hype than help, with hidden costs and security worries.**

**NEW ORDER: Buying IT services as you go keeps pace with changing budgets and business demands.**

**BY GARY ANTHES**

OUR FORECAST survey of nearly 300 IT executives revealed lukewarm interest in software as a service despite its budget-friendly, pay-as-you-go model. In fact, on a list of 24 possible IT project priorities for 2009, survey respondents ranked SaaS at No. 23. What's holding users back? Potential security risks and a loss of IT control topped the list of perceived barriers to SaaS adoption. With so much trepidation in the air, *Computerworld* decided to get the real scoop, so we interviewed six executives who have tackled SaaS projects.

**What has been the greatest benefit from your use of SaaS?**

**KEN HARRIS, Shaklee Corp.:** "The first, far and away, is the ability to get solutions up quickly. You don't have to build out an infrastructure or expand your IT staff."

**KEVIN RAYBON, NEC Unified Solutions Inc.:** "I call it value control. When I have features and functions that need to be developed, I can roll them out and keep moving. I'm not in the IT department. With IT, there is always a big-bang initiative that lasts about 18 months, and the pace of our business does not lend itself to that."

**DANIEL FLAX, Cowen and Co.:** "The ability to deliver services to a worldwide audience."

**DANIEL WAKEMAN, Educational Testing Service:** "The key benefits are speed and the lack of capital investment."

**KEVIN HARDING, Imagine:** "It's being able to get more information out to more people. Managers can get real-time financial information on their departments." The predecessor in-house financial system gave only monthly reports, he says.

**Is security an issue?**

**FLAX:** "Security certainly is a potential problem, and anyone who says no is not being realistic. We vet our potential vendors very carefully, and we get our audit and compliance people involved as well."

**DANIEL CHIAZZA, Harris Interactive Inc.:** "Salesforce.com had a big scare with phishing recently. So they basically took a listing of all the IP addresses that access our applications — where our users are, where they log in from — and put that in a whitelist. They were very quick to react."

**Quicker than an internal IT department might have been?**

**CHIAZZA:** "Yes, it can take forever to turn something around internally."

**WAKEMAN:** It's a "huge shortcoming" that SaaS vendors do not embrace "federated identity management" standards allowing centralized identification and validation of users via a single sign-on process, he says. "We have to manage the identities of our employees at multiple SaaS providers. We can't say that this employee has terminated and automatically shut him off from all the systems he has access to."

**RAYBON:** "There are two ways to handle security. First, have strong

## Virtual Panelists

**Daniel Chiazza, vice president for global sales operations, Harris Interactive Inc. Uses SaaS from Salesforce.com Inc.**

**Daniel Flax, CIO, Cowen and Co. Uses SaaS from Salesforce.com.**

**Kevin Harding, director of IT, Imagine. Uses SaaS from NetSuite Inc.**

**Ken Harris, CIO, Shaklee Corp. Uses SaaS from RightNow Technologies Inc. and several other companies.**

**Kevin Raybon, general manager of sales operations, NEC Unified Solutions Inc. Uses SaaS from Oracle Corp.**

**Daniel Wakeman, CIO, Educational Testing Service. Uses SaaS from Salesforce.com, Microsoft Corp., Akamai Technologies Inc. and Keynote Systems Inc.**

## SAAS BUSTERS

**What do you perceive to be the barriers to SaaS adoption?**

| | |
|---|---|
| 1 | Potential security risks |
| 2 | Loss of IT control |
| 3 | Network bandwidth |
| 4 | Offline connectivity |
| 5 | Lack of interoperability among vendors ("vendor lock-in") |
| 6 | Company data comingled with other businesses' data |
| 7 | Lack of customization or competitive edge |
| 8 | Service-level agreements/ contracts |

BASE: 150 RESPONDENTS TO COMPUTERWORLD'S SEPTEMBER 2008 FORECAST SURVEY WHO SAID THEY WEREN'T PLANNING TO ADOPT SAAS IN THE NEXT 12 MONTHS

contracts that hold people accountable should something happen. Second, we put information about processes in the cloud, but we keep all our proprietary corporate data back in our system of record. I keep track of sales opportunities in [Oracle CRM] On Demand, but once it turns into an order with credit information, that stays inside."

**Is loss of IT control a concern?**

**HARDING:** "It's kind of a double-edged sword. Yeah, it's not my baby anymore, but I also don't have to worry about it. The only downside has been when they roll out upgrades. We do have the ability to test, and we do test, but sometimes the upgrade breaks things. So when we see an upgrade coming, we just plan on having some problems for the next week."

**RAYBON:** "I think I have more control. We can sit down with someone who doesn't have to write code — business users — and we can rapidly prototype. We can bring things up without the need for technical resources."

**FLAX:** "You do lose some control. In return, you get some benefits." The loss of control suggests that commodity applications go to SaaS while those conferring competitive advantage stay in-house, he says.

**WAKEMAN:** "You can put whatever you want into a contract, and we do — that we own the data, they have to give it to us, etc. But you know, they could still lose it, or they could be lying about how they back up data. It's impossible for us, with the number of these things we use, to go and inspect all those places."

**HARRIS:** "You absolutely need to negotiate the service. You need commitments — with economic rewards and penalties — to availability, to transaction-response times for one or two key transaction types, and to the response time to situations where the system is down and there are no work-arounds."

**Do you worry about vendor lock-in?**

**CHIAZZA:** "There are things you can do. We do weekly downloads of the entire database. A few years ago, I would have felt a little bit locked in, because Salesforce.com was really the only one doing this. But other companies are catching up. Today, we could easily take our data and move it over [to another vendor]."

**WAKEMAN:** "That's definitely a concern. We have that issue with internal applications, but with external, it's a little more difficult if you are locked into a vendor that gets acquired or goes out of business. With internal, you can keep running it for some time while you figure out an exit strategy. But with external, you may have to make a rapid switch, and the switching costs could be high."

**RAYBON:** "With an in-house option, you devote a business process to the platform that the vendor supplies. I don't think it's more of an issue with SaaS. Also, we take snapshots of CRM On Demand, and we keep a much more robust data model in-house.

"In the unlikely event that Oracle CRM got dropped, it wouldn't take me long to switch over to a competitor with another Web service."

**Are you able to customize SaaS?**

**CHIAZZA:** "When we first implemented Salesforce.com more than five years ago, it was not customizable by the user. Slowly but surely, they started giving us the keys and opening things up. We now have 300 to 400 custom fields and three or four custom applications." A new application can take a few hours to a few days to set up, he adds.

**WAKEMAN:** "Years ago, we decided our [SaaS-based] ERP system would be as vanilla as possible. That was a wise choice. It commoditizes it and means we can move to someone else, because vanilla is vanilla.

"For commodity stuff like e-mail, back-office and basic systems — don't customize it. For stuff that's unique to your business, run it in-house or build a front end to it, and put all the customization in there."

**RAYBON:** "Our business has some unique forecasting needs that aren't part of the off-the-shelf forecasting functions of CRM On Demand. So we put that in a separate system. I have my own group of IT people who are developing pieces around the core function."

### BRIGHT SPOT

**A SaaS system isn't the IT manager's baby anymore, but neither are worries about security, reliability and maintenance. But are you worried about paying for it now that the economy – and your budget – are tanking? Maybe not; SaaS charges are often paid directly by end-user departments.**

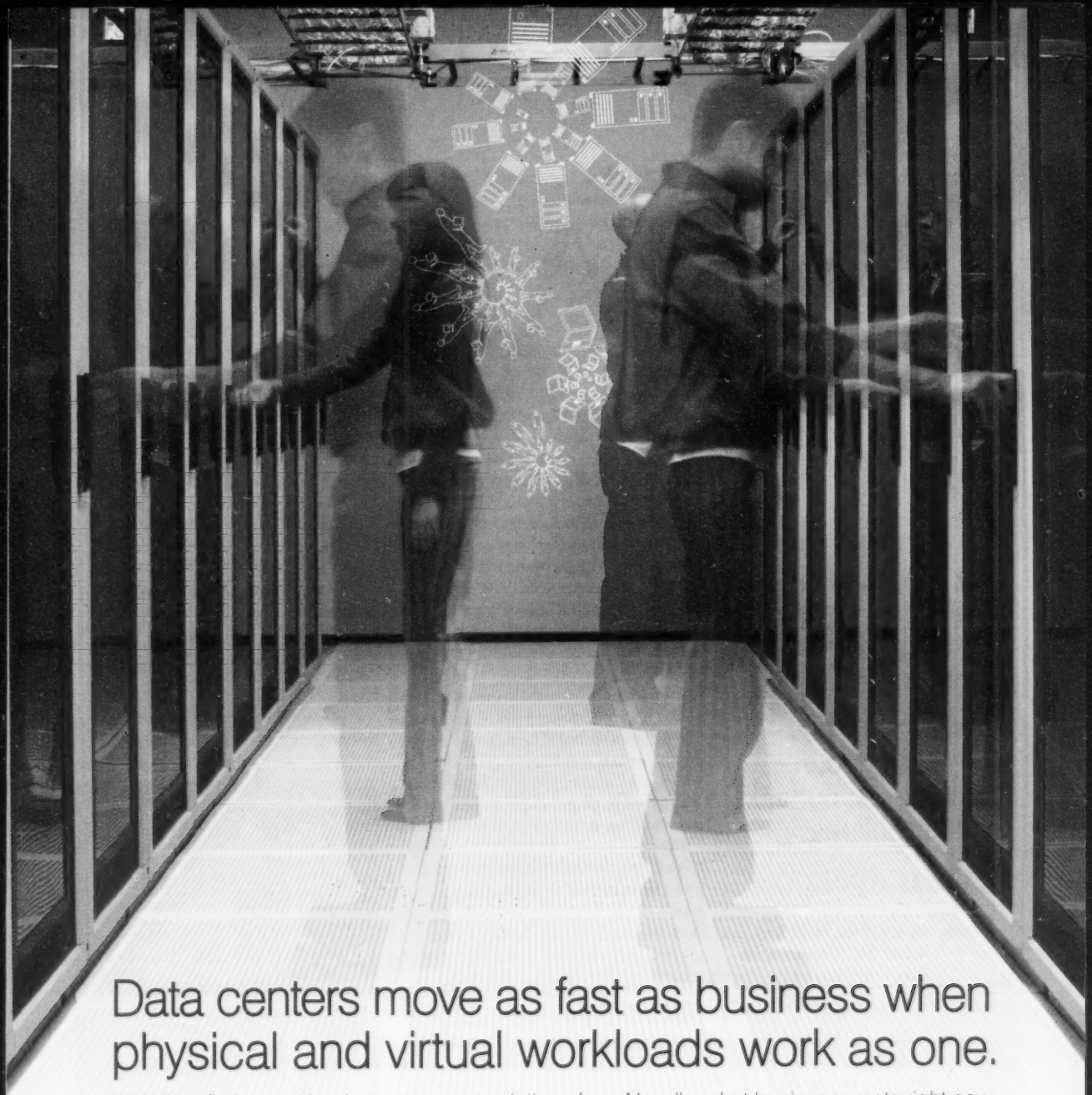
**Is SaaS an especially attractive option now that the economy is tanking and IT budgets are under pressure?**

**CHIAZZA:** "Salesforce.com does not come out of our IT budget. We pay for it. It's a business expense. You only pay for what you use. It's here to stay."

**FLAX:** "Service offerings are great because they allow us to ramp up and down. We think we should be able to do the same thing year-on-year for 5% less. So I'm always putting downward pressure on our budget."

**WAKEMAN:** "Because SaaS charges are treated as an expense, whereas the costs of developing an in-house system are capitalized, SaaS may enable a company to sidestep reductions in its capital budget."

**HARRIS:** "You'd like to continue to make progress in capabilities and technology through tough budget times. SaaS is going to be one of the best ways to do that." ■



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# Your New-Age Workforce

**OLD NOTION: Your best project team is made up of your most experienced workers.**

**NEW ORDER: Next-gen workers can bring a fresh outlook to old problems.**

BY JULIA KING

SOME OF the best ideas come out of what seems like left field.

Consider the phlebotomist at Sonora Quest Laboratories LLC who came up with an automated way to securely download patient billing information from hundreds of physicians' offices.

And if you're wearing invisible braces, you can thank two Stanford University MBA students, not an orthodontist, for designing them.

At Accenture, it was a project team's consumer packaged goods expert who figured out how one client — a financial services company — could best cross-sell products and services to its customers.

"Every project team we build has an entire spectrum of age and experience represented," says Accenture managing director Gary Curtis, who leads the company's 8,500-person technology consulting organization. The reason, he says, is simple: "Diversity guarantees the best project result and usually some layer of innovation."

The idea of populating a creative team with people from diverse disciplines isn't entirely new. What is new and different is both the range and depth of team diversity required to succeed in an increasingly global economy and a world in which technology is advancing at warp speed.

Inventor extraordinaire Thomas Alva Edison is said to have hired experts from the railroad and telegraph industries and mixed them together with mechanical and chemical engineers at his laboratories in New Jersey and Florida in the late 1800s and early 1900s. When one of the experts couldn't solve a problem in his specialty area, Edison would assign it to another expert from a different discipline with an altogether different point of view.

"You need people who can see things differently and not get trapped in their own disciplinary assumptions," says Robert I. Sutton, a Stanford University engineering professor who specializes and teaches courses in organizational psychology, innovation and organizational behavior. "People from different disciplines will have different points of view."

But it's not just disciplinary diversity that's needed. The most successful project teams also represent a diversity of ages, cultural backgrounds and technology experience. Younger employees, or "millennials," for example, come to the workplace with "a whole different life experience, especially with regard to technology in their personal lives," says Curtis.

More specifically, he says, "they have an expectation of what technology should do to help make your life easier. For example, they'll think about a mobility solution even if the client might present what they think is a Web-based problem. They offer a perspective that leads to a broader solution, so mobility tends to get built into whatever they're working on."

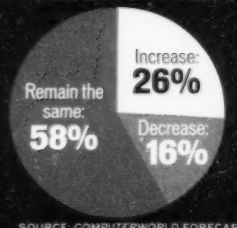
## UNANTICIPATED BENEFITS

As a Six Sigma company, Sonora Quest is no stranger to pulling together diverse project teams. "We have young guys coming in and asking, 'Why are you doing something like that?' " says CIO Bob Dowd.

Still, Dowd says the inclusion of millennials and their interaction with workers from the baby boom genera-

## SAME PLAYERS

**What changes do you expect in your IT employee head count in the next 12 months?**




SOURCE: *COMPUTERWORLD* FORECAST SURVEY, SEPTEMBER 2008
BASE: 287 RESPONSES

**If you expect your IT employee head count to increase, which factors will account for that?**

| | |
|---|---|
| New systems and projects | 73% |
| Corporate growth/ systems expansion | 71% |
| Security initiatives | 7% |
| Regulatory compliance demands | 5% |
| Other | 3% |

BASE: 75 RESPONDENTS WHO SAID THEY EXPECT IT HEAD COUNT TO INCREASE. MULTIPLE RESPONSES ALLOWED

## Sharing the Sandbox

**Here are four tips for dealing with diversity, from Robert I. Sutton, professor of engineering at Stanford University:**

1. **If somebody makes you squirm, it's probably a good sign.**
2. **If your first reaction is negative, view that as something worth looking into further.**
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One recent example came during the implementation of new IT help desk software. "It was an IT project, and we didn't know how we were going to use the software in other aspects of the business," Dowd explains. "But it was one of our young salespeople who came up with the idea of using the IT services catalog application for new services that sales is providing in the field. Sales used to have to [file paper reports], and it could take a week to get information distributed. Now, it is instantly in the system and distributed."

Experts also say gender diversity on project teams is equally, if not more, important. It's an area in which IT has historically scored low marks and clearly has a lot of work to do.

"The computer industry is dominated by white males and Indians and Asian males. It's not an industry that is really good with women," notes Sutton.

Curtis agrees. "There's an overwhelming majority of males, because that's what the universities are producing," he says. But all-male project teams are far from ideal when it comes to innovating and incorporating a wide breadth of ideas, he says.

"A team of all men is generally going to work in a hierarchical way. If it's a big team, men are more comfortable taking their part of the problem and going off and solving it," Curtis says.

In comparison, a team of women tends to work in a more communal way, he says. "They talk to each other about problems, and they'll help each other out. In project environments, women reach out better to the outside world," says Curtis.

While the rewards of project team diversity seem clear, the management challenges and pitfalls are often less obvious and can vary widely depending on the company, the degree of diversification and the processes in place for managing projects, experts say.

Consider the team made up of millennials and baby boomers. "Millennials don't think about authority the same way as older workers," notes Curtis. "You can't tell them to do this or to do that. You have to win their hearts and minds. You have to educate them on what's important."

Accenture recently surveyed more than 400 millennials ranging in age from 14 to 27 and found that a majority of 18-to-22-year-old workers see no need to get corporate approval for the technologies they use in the course of their work. They regularly download nonstandard technology from free public Web sites, including open-source communities and mashup and widget providers.

### BRAND-NEW APPROACHES

At Sonora Quest, Dowd says the arrival of millennial workers has often challenged, and in some cases changed, the way the company's project teams communicate.

"They're much more into texting and IM'ing, whereas some of our older people are used to talking things through and e-mailing. Seasoned people want to go through projects more methodically, whereas the younger guys want to try this or try that without all of the facts."

But more rules aren't the answer, Dowd says. Rather, the key is to begin the slow process of educating everyone about the value each member brings to the team.

California's Office of the State CIO is hoping to attract a more diverse IT workforce, notably younger professionals with Web 2.0 skills, by changing both its mobile work and recruiting practices, according to Chief Deputy Director Christy Quinlan.

"The younger generation is used to working more independently. They're used to going to places like bookstores or Starbucks or to libraries and working there. They might work a couple of hours, run to the gym, come back to work [and] then work till 11 o'clock at night. They're used to setting their own work hours," she says.

In response, the CIO's office has adopted a more flexible approach to work hours. "The reality is we're not really worried about it," Quinlan says. "We have respect for these workers and a confidence that is based on their track record of producing."

Jacobs Engineering Group Inc., a global technical services firm based in Pasadena, Calif., is managing for diversity at the executive level by collecting metrics from every regional vice president on how well women and minorities are represented on project teams.

"Diversity is part of our monthly reports and is also considered for bonuses," says CIO Cora Carmody. This is because "diversity absolutely fosters innovation. What gets measured gets improved, so we're constantly looking at diversity metrics and thinking of ways to improve and innovate." ■

### COST CUTTERS

**If you expect your IT employee head count to decrease, which factors will account for that?**

| | |
|---|---|
| Economic pressure/ business slowdown | 65% |
| IT department restructuring | 37% |
| Technology consolidation | 33% |
| Outsourcing | 26% |
| Employees encouraged to take retirement packages | 20% |
| Merger or acquisition | 9% |

BASE: 46 RESPONDENTS TO THE SEPTEMBER 2008 COMPUTERWORLD FORECAST SURVEY WHO SAID THEY EXPECTED IT HEAD COUNT TO DECREASE. MULTIPLE RESPONSES ALLOWED.

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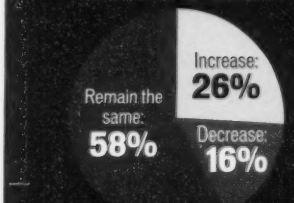


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California's Office of the State CIO is hoping to attract a more diverse IT workforce, notably younger professionals with Web 2.0 skills, by changing both its mobile work and recruiting practices, according to Chief Deputy Director Christy Quinlan.

"The younger generation is used to working more independently. They're used to going to places like bookstores or Starbucks or to libraries and working there. They might work a couple of hours, run to the gym, come back to work [and] then work till 11 o'clock at night. They're used to setting their own work hours," she says.

In response, the CIO's office has adopted a more flexible approach to work hours. "The reality is we're not really worried about it," Quinlan says. "We have respect for these workers and a confidence that is based on their track record of producing."

Jacobs Engineering Group Inc., a global technical services firm based in Pasadena, Calif., is managing for diversity at the executive level by collecting metrics from every regional vice president on how well women and minorities are represented on project teams.

"Diversity is part of our monthly reports and is also considered for bonuses," says CIO Cora Carmody. This is because "diversity absolutely fosters innovation. What gets measured gets improved, so we're constantly looking at diversity metrics and thinking of ways to improve and innovate." ■

### COST CUTTERS

**If you expect your IT employee head count to decrease, which factors will account for that?**

| | |
|---|---|
| Economic pressure/ business slowdown | 65% |
| IT department restructuring | 37% |
| Technology consolidation | 33% |
| Outsourcing | 26% |
| Employees encouraged to take retirement packages | 20% |
| Merger or acquisition | 9% |

BASE: 46 RESPONDENTS TO THE SEPTEMBER 2008 COMPUTERWORLD FORECAST SURVEY WHO SAID THEY EXPECTED IT HEAD COUNT TO DECREASE. MULTIPLE RESPONSES ALLOWED.

FORECAST 2009

# 9 Hottest Skills For '09

**OLD NOTION: Certain skills, such as programming, are prime for outsourcing.**

**NEW ORDER: Firms want developers and other talented staffers in-house.**

**BY THOMAS HOFFMAN**

BY ALMOST any measure, the U.S. economy is in its worst state since the Great Depression. Consumer spending is down, credit markets remain weak, and more than 10 million Americans are out of work.

Yet despite the grim financial picture, demand for certain types of IT skills, such as SAP, .Net and help desk/support, remains strong. And while some employers will continue to look outside their companies to find workers with expertise in these and other disciplines, some CIOs are building some of this know-how internally as hiring freezes become more common.

Here's a look at the hottest skills, as cited by respondents to *Computerworld*'s annual Forecast survey.

## 1 PROGRAMMING/ APPLICATION DEVELOPMENT

Ask any recruiter what the single most sought-after IT skill is at the moment, and the universal response is a three-letter word: SAP.

"The little joke in our industry right now is that if you have 'SAP' on your résumé right now, you have zero unemployment," says Bruce Culbert, CEO of iSymmetry Inc., an IT consulting and recruitment firm with offices in Washington and Alpharetta, Ga.

SAP experts, particularly those who are experienced with a specific module in a certain industry, are commanding $35 to $40 per hour more on average than other types of senior technicians, says Culbert. Demand for SAP skills has remained red hot because a growing number of companies are working toward establishing global instances of the ERP system, says Jill Herrin, president of IT recruiter JDResources Inc.

But not far behind is demand for IT professionals with .Net experience, say Herrin and other observers. Some companies that relied on offshore labor to deliver .Net and C# capabilities just a few years ago found that route to be "nonproductive," says Herrin. Now they're looking to fill those jobs in-house, she says.

Rich Schappert, senior director of IT at Casey's General Stores Inc. in Ankeny, Iowa, says he has been filling the retailer's demand for .Net and SQL Server programmers for the past five years by recruiting and training local college students. The company, which operates 1,500-plus stores across the Midwest, has been moving its Cobol-based financial applications into the .Net environment to reduce its mainframe costs. "[It's also] getting tougher to find people who know Cobol," notes Schappert.

## 2 HELP DESK/ TECHNICAL SUPPORT

Help desk and technical support skills remain in strong demand, particularly for people who offer a blend of deep technical expertise and solid customer-service abilities, says Herrin. "I have lots of customers who tell me their customer service function is broken and they need people with better communication skills," she says.

"One of the things we're seeing a demand for in this space is what we call a JOAT — a jack-of-all-trades — somebody who can do break/fix work and a bit of desktop support," says Katherine Spencer Lee, executive director at IT staffing firm Robert Half Technology. Demand for well-rounded technicians tends to become more acute when companies are looking to get more work done with fewer people, she says.

## 3 PROJECT MANAGEMENT

Even though many companies are cutting back on IT projects, there's still robust demand for project managers with solid track records, says Spencer Lee. "A differentiator is whether the person can articulate that they've brought a project in on time — or, better yet, under budget — and how they did that," she says.

Project management is one of the areas "that endure all economies and climates, where companies are constantly

## HELP DESKERS AND CODERS WANTED

The nine most sought-after skills:

| | |
|---|---|
| 1 | Programming/application development |
| 2 | Help desk/technical support |
| 3 | Project management |
| 4 | Networking |
| 5 | Business intelligence |
| 6 | Security |
| 7 | Web 2.0 |
| 8 | Data center |
| 9 | Telecommunications |

SOURCE: *COMPUTERWORLD* FORECAST SURVEY, SEPTEMBER 2008
BASE: 75 RESPONDENTS WHO EXPECTED TO INCREASE HEAD COUNT IN THE NEXT 12 MONTHS

looking for people who understand the project and the systems development life cycles and make sure the project goals are closely aligned with the business objectives," says Harvey Koeppel, executive director of the Center for CIO Leadership in New York.

Employers also need people with project management certificates, even at the vice president level, according to some headhunters. As of late July, The Computing Technology Industry Association had awarded 20% more Project+ certifications than in the previous year, says Gretchen Koch, director of skills development programs at CompTIA.

### 4 NETWORKING

The ongoing convergence of voice, e-mail, video, instant messaging and other communications systems will continue to create demand for networking specialists with implementation experience. For example, Scholastic Inc. in New York posted a job opening in November for a network convergence manager to help it create a virtual call center using voice over IP, says Saad Ayub, senior vice president and CIO at the children's education company.

Those types of projects often require new skills as well. In 2008, for example, CRST International Inc. moved from a frame-relay network to AT&T's Multiprotocol Label Switching network and installed Cisco's VoIP system. As part of that project, the Cedar Rapids, Iowa-based transportation company trained some of its IT staffers to become Cisco Certified Voice Professionals, says Steve Hannah, vice president of IT.

Network convergence projects will also heighten demand for workers with network security and data privacy acumen, Koeppel says, adding that "it's not just pure [network] backbone and infrastructure skills" that are being sought by employers.

### 5 BUSINESS INTELLIGENCE

Now more than ever, corporate executives want to be able to analyze customer and sales data in order to make informed decisions about business strategies. That's driving demand for business intelligence specialists across the board, including people with data mining, data warehousing and data management skills.

At Aspen Skiing Co., which operates four ski resorts in western Colorado, company officials will be making year-over-year comparisons on customer spending, including analyses of spending habits during the previous recession, says CIO Paul Major. "We're going to have to get very granular with our analytics," he says.

Meanwhile, there's steady demand for IT professionals with experience using vendor-specific BI tools from companies such as Business Objects and Cognos, says Spencer Lee. But the toughest people to find in this area are those who can help business managers understand the type of data they're trying to analyze and how to interpret the results, she says. "What's difficult," she adds, "is to find someone who's the full-meal deal."

### 6 SECURITY

When it comes to demand for certain types of security professionals, those with SAP security experience "are probably the hottest of the hot right now," says Herrin.

But interest in security professionals remains strong across the board. "Companies can't ignore security requirements, even in tough economic times," says Stephen Pickett, CIO at Penske Corp. and past president of the Society for Information Management.

There's also strong interest in people with network and wireless security skills, as well as those with Certified Information Systems Security Professional accreditation.

### 7 WEB 2.0

While many companies are just starting to noodle with corporate implementations of social networking applications such as MySpace and Facebook, "more and more companies are trying to reach their customers via the Web," says Pickett.

Demand for Web 2.0 skills is also driven by the continuing expansion of business-to-business connections. For instance, Children's Hospital and Health System in Milwaukee recently created a portal for roughly half of its physicians who work remotely. The system provides them with access to summary medical data on patients, says Mike Jones, vice president and CIO.

### 8 DATA CENTER

Most of the glass-house buzz is about server and storage virtualization projects that help organizations lower their energy costs and shrink their data center footprints.

But few companies are recruiting specifically for data center skills. Instead, they're retraining existing staff in VMware and other virtualization technologies. For instance, Aspen Skiing is considering virtualizing up to 40% of its servers in 2009, says Major. To achieve that, Aspen Skiing plans to rely on VMware and EMC to provide staff with the necessary training.

### 9 TELECOMMUNICATIONS

VoIP and projects involving unified communications continue to drive demand for blended telecommunications and networking skills, particularly among small to midsize businesses that are just beginning to deploy these systems, says Spencer Lee. Interest in Wi-Fi, WiMax, Bluetooth and related skills is also growing, says Koeppel, "particularly as cities look to WiMax as a feature to attract businesses." ■

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# Office Bling For '09

**OLD NOTION: Squeeze every drop from your old equipment.**

**NEW ORDER: Fresh gadgets crank up your productivity.**

**BY RUSSELL KAY**

NOTHING STANDS still in business; needs, skills and opportunities change. When upgrading IT equipment, most enterprises squeeze every drop of utility from basic hardware to get the best possible return.

That's sensible, but many companies look at upgrades differently. Rather than settling for minimal commodity equipment, they invest a little more to get products with fresh features and new capabilities that may increase their employees' productivity.

With this in mind, consider using or testing some of these interesting and innovative products in the coming months.

## 1 SMART PHONES AND CELL PHONES

Offering PDA capabilities, add-on applications, e-mail, Web browsing, GPS, maps, cameras, voice recorders, music players, multimode wireless and more, today's best smart phones seem to be the consolidated devices we've been waiting for — at least until something better comes along.

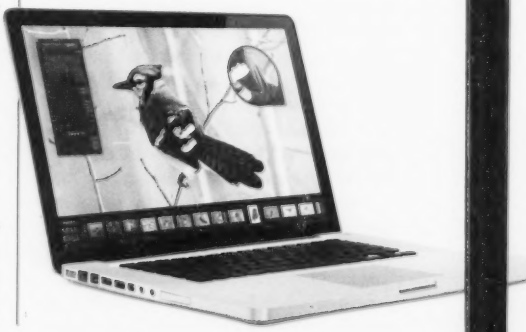
I find **Apple Inc.'s iPhone 3G** (with AT&T service) reigns supreme for ease of use and the best overall interface, plus it offers an excellent API. But given the wide corporate acceptance of previous BlackBerries, the new BlackBerry Storm (with Verizon service) could be a better bet for enterprise use, though it lacks Wi-Fi. And HTC Corp.'s Android-based G1 (with T-Mobile service) might be the best choice for other enterprises.

## 2 NETBOOKS

When you need a bigger screen, a keyboard and real PC applications, but weight and mobility still matter, check out these units at under 3 lb. each. I tried and liked the **Windows XP-based Mini-1000 from Hewlett-Packard Co.** Initially skeptical that it might be too small for easy use, I took the $549 Mini-1000 on a weeklong trip and found that it did everything I needed it to. I wouldn't want this as my only computer, especially since it lacks a DVD drive and its keyboard is a bit too small for fast typing with big fingers, but overall, it's a sweet package that travels easily.

## 3 LAPTOPS

Here's a potentially controversial vote in favor of the new Apple laptops. They cost more than PCs and using them could require IT to support Mac OS X as well as Windows, but the MacBook and the **MacBook Pro** match up very well against enterprise notebooks from Lenovo Group Ltd. or Dell Inc. The Apple machines are great — rugged, reliable and nicely portable. For a more traditional, Windows-only choice, I like the new Latitude E-4300, a worthy successor to Dell's long line of enterprise laptops for road warriors.



## 4 DESKTOP PCs

Often considered mere commodities, desktop PCs have undergone few major changes in recent years. But take a fresh look at **HP's TouchSmart IQ500 series**, starting at $1,300. The large integrated touchscreen/CPU/drive package could change your notion of the ways you can interact with a computer. This new desktop format easily switches among multiple applications, and it will look spectacular on a reception desk.

## 5 DISPLAY MONITORS

With flat screens the norm, consider new, inexpensive 19-in. and larger models with energy-saving LED backlights. Employees will appreciate their bigger, brighter images. For the very best color and highest contrast, I looked at Dell's spectacular 30-in. widescreen monitor, the $1,999 UltraSharp 3008WFP. With its huge, high-resolution screen (1,920-by-1,080 analog; 2,560-by-1,600 digital) I find I actually work differently and more efficiently, keeping more application windows and data on-screen simultaneously — a real timesaver with large projects. And all without eyestrain or the prescription glasses I need for smaller monitors.

## 6 GPS

A good portable GPS unit used to cost $500; now they start well under $200, with bigger screens, more storage and maps, and better interfaces. Moved easily from car to car, they can be ideal timesavers for those who travel a lot on business. I own a low-end Magellan, but if I were buying now, I'd opt for the larger-screen **Garmin Nuvi 255W**, which has a nicer interface.

## 7 MOBILE TOOLS

**Amazon.com Inc.'s Kindle** is the best dedicated e-book reader I've seen yet. It's quiet and small and has a nicely readable screen. Though pricey, it's a handy way to take along and read a lot of material without lugging around the weight or bulk of printed copies. In addition to being able to download e-books, newspapers and magazines without needing a PC, you can e-mail Word documents to the Kindle and have Wikipedia access.

Another tool offering serious value is a portable backup drive. Small hard drives like Seagate's FreeAgent Go offer 250GB to 500GB for between $100 and $200. They're compact, lightweight insurance.

### PREDICTION

**"Multitouch interfaces will move beyond cell phones and games to become more common on PCs. The interfaces accept input from multiple screen locations at the same time. They recognize pressure and movements such as two-fingered dragging, pinching or a loop drawn with a single finger (think Tom Cruise in *Minority Report*.)**

**BART PERKINS,** MANAGING PARTNER AT LEVERAGE PARTNERS INC. AND A *COMPUTERWORLD* COLUMNIST

## 8 DIGITAL CAMERAS

Today's handy point-and-shoot cameras are good, but sometimes they don't do the job. If you'd like the capabilities of a full digital SLR without the size, weight and cost, try **Panasonic's under-$300 Lumix DMC-FZ28**. It's just a bit bigger than the little guys, yet it offers serious versatility. Its high-quality 18:1 zoom lens and 10-megapixel resolution deliver superb image quality. If you absolutely need to fit it into your shirt pocket, check out Panasonic's 9-megapixel DMC-TZ50; it's half the thickness, though the zoom lens has "only" a 10:1 range.

## 9 PRINTERS

With current technology, consumable costs quickly outstrip hardware, so there's little reason to stick with older, slower printers. Consider giving many users an inexpensive all-in-one printer/scanner/copier for more convenience and faster printing. For this story, I tried **HP's Officejet J6480**, at under $200, and liked it a lot. It offers automatic two-sided printing, a good multipage document feeder for copying and scanning, and wireless connectivity that eliminates cabling issues (especially nice with laptops) and simplifies printer placement. ■

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FORECAST 2009

# WINNERS

**Dell will make a comeback. Its stock has been overpunished by the stock market downturn. Michael Dell is back on the case, and they are re-engaging with the idea of customers helping to make the product. That should help Dell avoid lower margins and excess inventory.**
**MIKE DOVER,** VICE PRESIDENT OF SYNDICATED RESEARCH, nGENERA CORP, CANADA

**The biggest technology winners in 2009 will be cloud computing, SaaS and technologies that enable companies to integrate cloud computing and SaaS into their existing in-house IT infrastructure. Businesses will be pushed to find ways to add new applications and functionality to their existing suite of systems, but they will need to do so faster and with less money.**
**MICHAEL HUGOS,** CIO AT LARGE, MENTOR AT THE CENTER FOR SYSTEMS INNOVATION, AND A *COMPUTERWORLD* COLUMNIST

**Apple will be a big winner in 2009 with products such as the iPhone and the Mac. With Exchange integration built into the iPhone and promised for the Snow Leopard release of OS X, Apple is poised to make some strong business inroads.**
**MICHAEL GARTENBERG,** VICE PRESIDENT OF MOBILE STRATEGY, JUPITERMEDIA, AND A *COMPUTERWORLD* COLUMNIST

# LOSERS

**One company that will fail in 2009 is Sun Microsystems. The company has lost its identity and hence its way in the marketplace. I also predict that Sun Microsystems will sell off pieces of the business.**
**JUDITH HURWITZ,** INDUSTRY ANALYST AND CO-AUTHOR OF *SOA FOR DUMMIES*

**Losers: Client/server applications. The cost of deploying, supporting and maintaining client/server applications is no longer affordable. Also, proprietary operating systems: I'm eliminating Solaris, AIX and HP-UX from my data centers' high-end SAN storage. I find that 90% of my storage needs are met with lower-end SAN, NAS and appliances, which use low-cost arrays of SATA drives.**
**JOHN D. HALAMKA,** CIO, CAREGROUP HEALTHCARE SYSTEM, AND A *COMPUTERWORLD* COLUMNIST

**2009 will be the year that finally exposes the lack of depth in IT leadership skills. Strong execs will convince senior management of the future value of projects that are not showing immediate or near-term value. The rest – a vastly larger group – will resign themselves to forced across-the-board cuts and project cancellations that companies will later regret.**
**DAVID FOOTE,** CEO AND CHIEF RESEARCH OFFICER, FOOTE PARTNERS LLC

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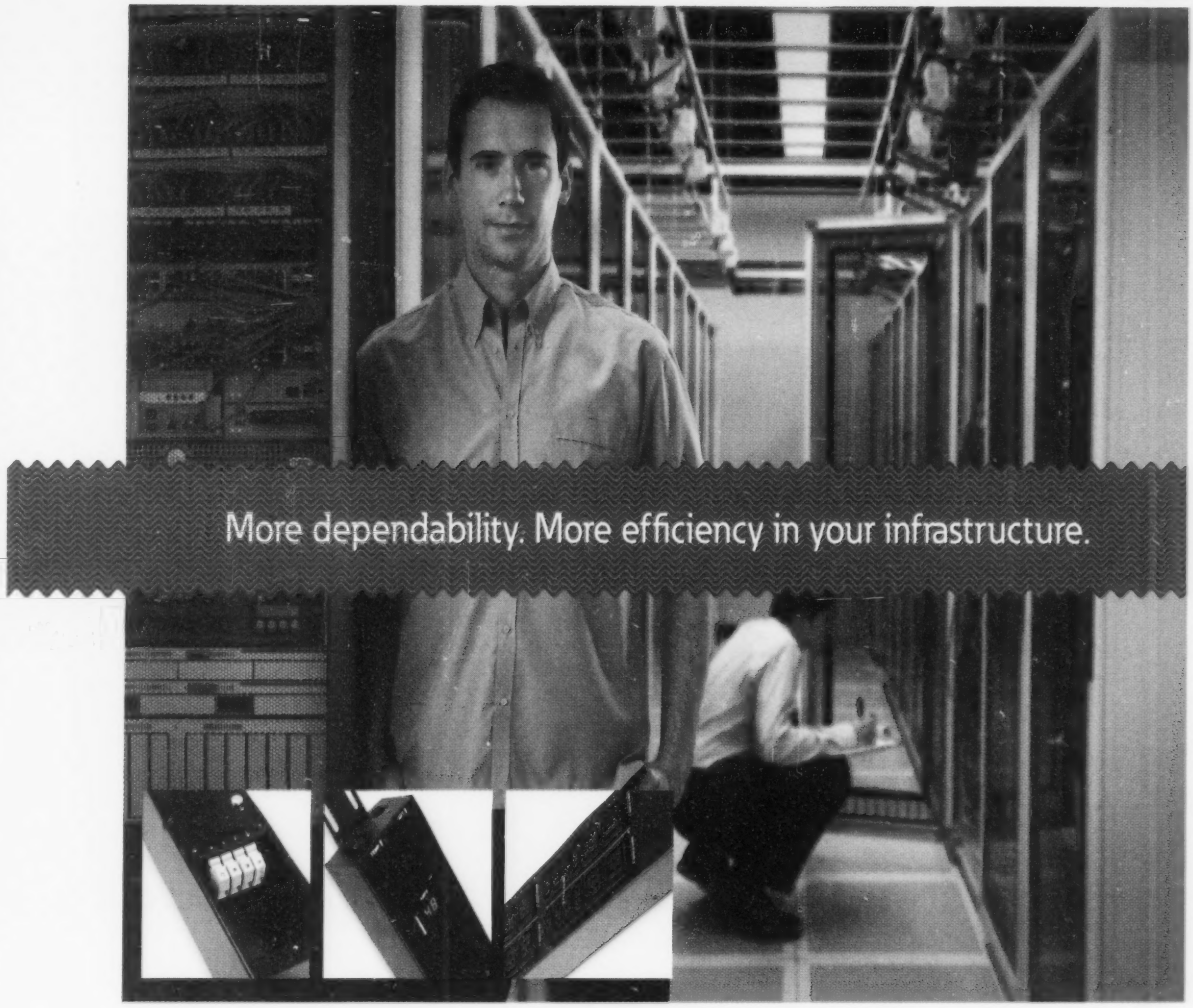


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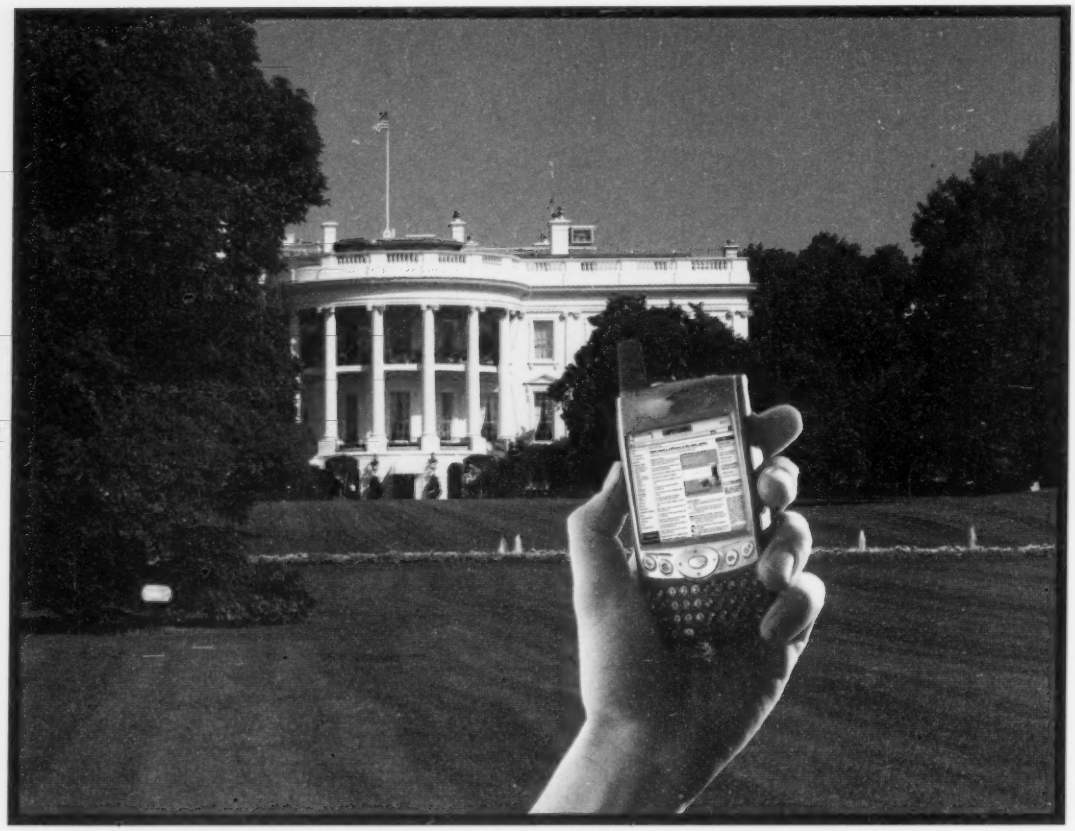

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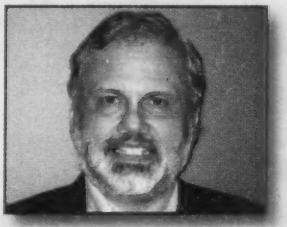

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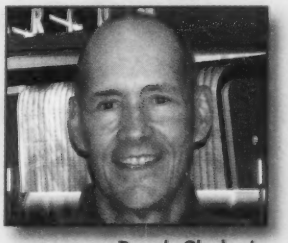

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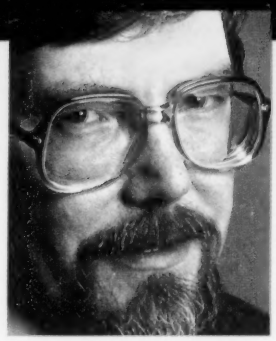


# After the Fall

READY FOR 2009? At this time last year, we were wondering how far down the economy would go. Now we know: way, waaaaay down. And at the moment, it feels like there's no end in sight — so it's strange to think that this year IT will lead the way to recovery.

But that's exactly what you should be preparing for.

Why? Because as bad as things look right now, the economy is likely to turn around much sooner than you expect.

Here, look: The current recession began in December 2007, according to the National Bureau of Economic Research, which charts the peaks and troughs of business cycles. The average recession since World War II lasted 10 months; the longest postwar slumps (in 1973-75 and 1981-82) lasted 16 months.

If we're in a 16-month recession, the economy will bottom out and start growing again in April.

Even if we break that postwar record, this recession will almost certainly end within the next 12 months. Except for the Great Depression, no U.S. recession has lasted more than 24 months since 1885.

Conclusion: We'll start coming out of the recession sometime this year.

But if the end is near, why does it feel like we're still in free-fall?

In part, that's because we're all comparing this downturn to the one we remember best: the last recession, in 2001. That lasted only eight months, and things *are* worse this time around. Instead of the Y2k anticlimax followed by the dot-com bust followed by a recession, we've got a housing bust followed by a credit implosion followed by a broader, deeper recession.

Another reason is that recessions aren't evenly distributed, and neither are recoveries. Some regions — and some industries — will be hit harder or sooner. Some will get off easy; a few will be spared entirely. Others will be hit relatively late, and the effects will linger longer. Depending on our locations and our businesses, we really are at different points on the curve.

**■ We'll start coming out of the recession in 2009. But if the end is near, why does it feel like we're still in free-fall?**

Mainly, though, we feel the fall because right now we're still tightening our belts and battening down the hatches. We're living in the present, and there's a lot of hard work to be done before we can start looking ahead to a recovery.

That feeling is natural. But it's also a missed opportunity.

See, though we're in belts-tightened, hatches-battened mode, IT can still lay the foundation for a fast start when conditions improve.

True, you don't know exactly what your business will look like when the economy starts to grow again. You don't know how your competitors will fare or what technologies will be the best fit.

But while you're ruthlessly paring down your project portfolio (rule of thumb: Freeze everything that doesn't have an enthusiastic sponsor *and* a finish line in sight), you can ask probing questions to learn about the business strategy each project serves.

While you're making the hard staffing decisions, you can start cross-training *everyone* to do operations work. Projects are sexy, but operations are essential — and the more flexible your people are, the better you'll function with a smaller staff now and a rebuilt staff later.

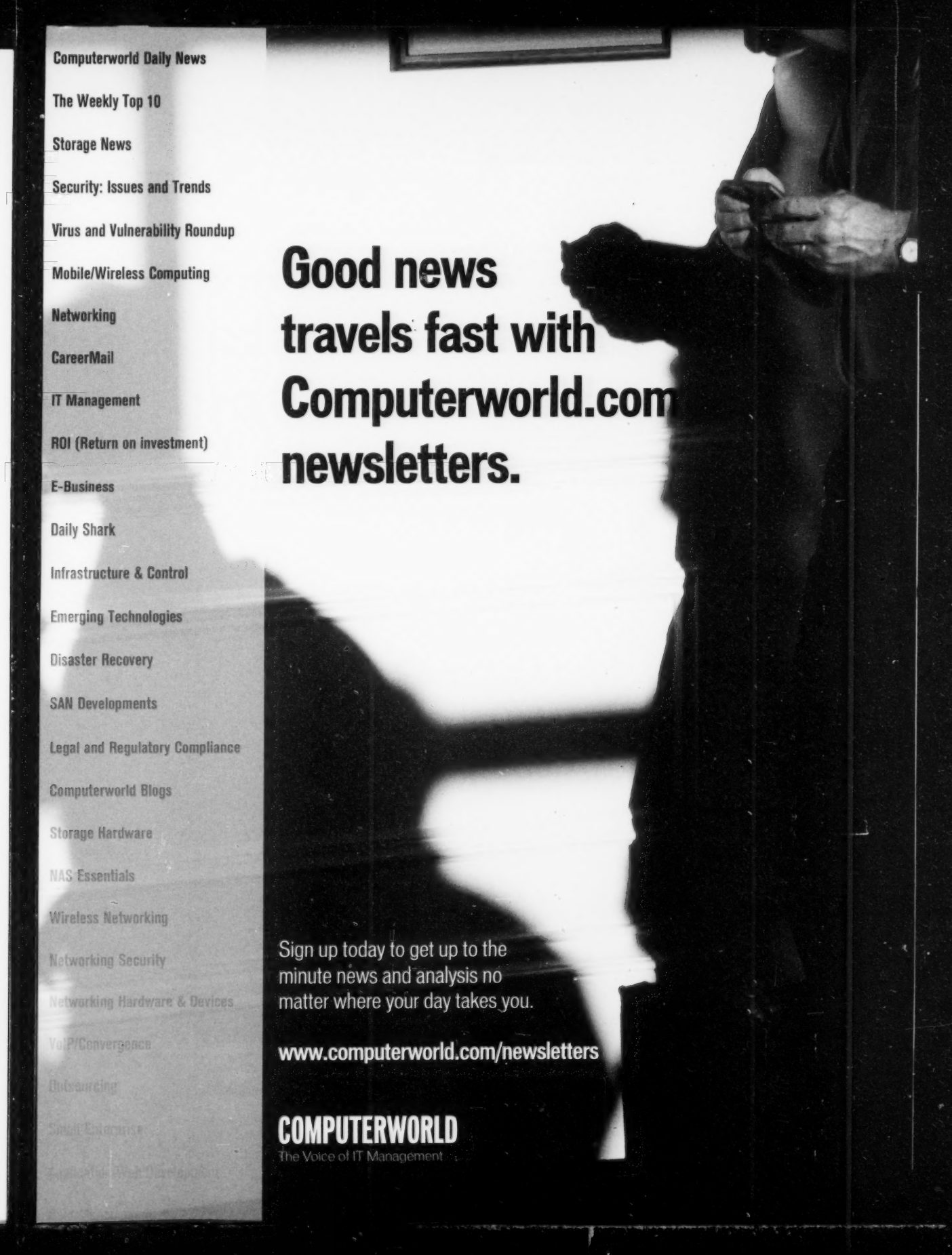
And while you survey the shreds of your budget, you can map out cleaner ways of handling development, operations and IT governance.

In short, you can prepare so that when the turnaround comes, your IT shop will know what the business needs — and deliver it.

This recession *will* end in 2009. Until it does, do more than just survive.

Get ready to lead. ■

**Frank Hayes** *is Computerworld's senior news columnist. Contact him at frank_hayes@computerworld.com.*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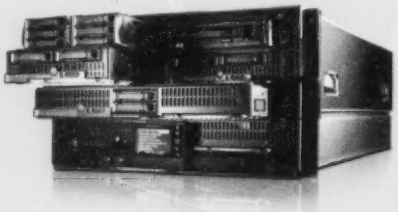

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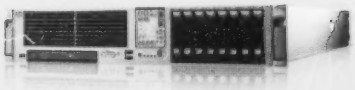

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